

**REPUBLIC OF TURKEY**  
**FIRAT UNIVERSITY**  
**INSTITUTE OF HEALTH SCIENCES**  
**DEPARTMENT OF PHYSICAL EDUCATION AND SPORTS**

**INVESTIGATION OF SPORTS INJURIES AND THEIR CAUSES IN**  
**STUDENTS OF FACULTY OF SPORTS SCIENCES AT FIRAT UNIVERSITY**

**MASTER'S THESIS**

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## **ETHICAL DECLARATION**

I declare that all the information and data in this thesis are obtained in the academic and ethical rules that I have realized with my studies and that I have done this thesis study, and that I have not behaved against the ethics at all stages from the planning of the studies to the obtaining of the findings and the writing phase and that this thesis study I declare, that I refer to sources, information and interpretations that are not included in the findings of this thesis.

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## 1. ABSTRACT

This study was carried out to define investigation of the Sports Injuries and their Causes in Students of Faculty of Sport Sciences Students at Firat University in terms of different variables (department, grade, gender, and age). The study is a descriptive survey model, and the survey technique was used.

During the data collection process, a questionnaire prepared by Nada (2014) was used and developed by the researcher according to experts' opinions. A questionnaire form consisting of seven sub-dimensions (sports branches, body parts exposed to sports injuries, types of sports injuries, place of injuries, causes of sports injuries, repetition of injuries, and recovery process) was used.

The population of the study consisted of 627 students studying in Physical Education and Coaching Departments in Faculty Sports Sciences at Firat University, and the sample consisted of 252 (40.19%) students randomly selected. The study covered the 2020-2021 academic year.

In the data analysis process, SPSS program was used and Chi-Square, Cronbach's alpha, frequency, and percentage analysis were performed. The results showed that the most common sports injuries were sprains (30.89%) and cramps (16.20%), while the most commonly affected body parts were the ankles (20.12%) and legs (14.70%). In addition, it was observed that the most common places of injuries were joints (31.71%) and the most common causes of sports injuries were bad warming up (14.98%) and overload training (10.09%). Additionally, football was ranked as the first sports branch in terms of

the number of injuries. In general, injuries were frequent and often took 1-2 weeks to heal.

As a result, football has been the sports branch where most of the sports injuries occurred. The most common sports injury is a sprain. The most common parts of the body that exposed to sports injuries are the ankles. bad warming up is also a major cause of sports injuries. During the recovery period, many injuries took 1-2 weeks to heal and were not at dangerous levels.

**Keywords:** Sport, injury, disability, student, branch

## 2. ÖZET

Bu araştırma Fırat Üniversitesin Spor Bilimleri Fakültesi Öğrencilerinin Spor Yaralanmaları ve Sebeplerinin farklı değişkenler (bölüm, sınıf, cinsiyet ve yaş) açısından incelenmesi amacıyla yapılmıştır. Çalışma betimsel tarama modeli niteliğinde olup, anket (survey) tekniği kullanılmıştır.

Veri toplama sürecinde, Nada (2014) tarafından hazırlanmış ve araştırmacı tarafından uzman görüşleri doğrultusunda geliştirilmiş bir anket kullanılmıştır. Yedi alt boyuttan (spor branşları, spor yaralanmasına maruz kalan vücut kısımları, spor yaralanması tipleri, spor yaralanmalarının sebepleri, yaralanmaların tekrarı ve iyileşme süreci) oluşan bir anket formu kullanılmıştır.

Araştırmanın evrenini Fırat Üniversitesi Spor Bilimleri Fakültesinde Beden Eğitimi ve Antrenörlük Bölümlerinde okuyan 627 öğrenci, örneklemini ise rasgele yöntemle seçilmiş 252 (%40.19) öğrenci oluşturmuştur. Çalışma 2020-2021 akademik yılını kapsamıştır.

Veri analizi sürecinde SPSS programı kullanılmış ve Ki-Kare, Cronbach alfa, frekans ve yüzdeler analizler gerçekleştirmiştir. Sonuçlar, en yaygın spor yaralanmalarının burkulma (%30.89) ve kramp (%16.20) olduğunu gösterirken, yaralanmaya en yaygın şekilde maruz kalan vücut kısımlarının ayak bilekleri (%20.12) ve bacaklar (%14.70) olduğunu göstermiştir. Ayrıca, en çok yaralanmanın yerlerinin eklemler (%31.71) olduğu ve en yaygın spor yaralanması sebeplerinin kötü ısınma (%14.98) ve aşırı egzersiz (%10.09) olduğu görülmüştür. Ek olarak, futbol branşı yaralanma sayısı açısından birinci spor branşı olarak sıralanmıştır. Genel olarak, yaralanmalar sıklıkla yaşanmış ve çoğunlukla iyileşmeleri 1-2 hafta sürmüştür.

Sonu olarak, futbol branşı spor yaralanmalarının oğunun gerekleştigi spor branşı olmuştur. En yaygın spor yaralanması burkulmadır. En yaygın şekilde spor yaralanmalarına maruz kalan vücut kısımları ayak bilekleridir. Kötü ısınma da spor yaralanmalarının temel bir sebebidir. İyileşme sürecinde, birçok yaralanmanın iyileşmesi 1-2 hafta sürmüş ve tehlikeli seviyelerde olmamıştır.

**Anahtar Kelimeler:** Spor, yaralanma, sakatlık, öğrenci, branş

### **3. INTRODUCTION**

#### **3.1. Background of the Study**

The programs of the Colleges of Sports Sciences aim to educate their students through the educational process to be of high scientific competence in the field of sports sciences, and to work in different sectors and fields to serve his country. Therefore, after selecting the best suitable elements from the applicants to study in it in terms of physical and psychological aptitude and previous experience in the field of sports practice. In recent times, some students are accepted in some universities, who are not competent in terms of physical and health, so injuries are increasing. The researcher found that it is necessary to conduct research in the field of sports injuries and to identify the most common causes that greatly affect the student's level of gaining skills and information in their studies.

Without hardship, excellence isn't always reached. Adversity will often be in the form of injury for many athletes. Sports accidents occur with increasing frequency, and medical professionals treat vast numbers of sports athletes each year. While contact sports cause more injuries to athletes than non-contact sports, sudden and traumatic injury can occur in any activity type (1). Despite scientific progress in various medical sciences and the adoption of modern methods of treatment and the availability of devices and specialists in the preventive and curative fields, but sports injuries are still increasing and constitute a risk at the level of athletes' performance in various games and activities, and sports injuries often occur during competitions and In training and Especially the injuries of the locomotor system, the injuries increase as the intensity of the athletic competition increases due to the pressures on the joints, muscles, vertebrae, bones and ligaments

during the physical effort, which may cause injury and sometimes the injury is acute or chronic, and also Injuries occur in recreational sports, school sports programs, and sports for the disabled (2).

The science of sports injuries is concerned with studying sports movement in different times, conditions, and static and moving positions, and reaching the ability to anticipate injury before it occurs and to determine its forms, types and patterns of injuries Which is related to the type of sporting activity practiced, in order to work to protect the player from injury, and the sport activity is considered in its modern educational image is an important field in preparing the righteous individual, through the physical education and sports classes, the upgrading of the functional efficiency of the body's physical organs, and Gain sports and health knowledge (3).

There are basically two types of injuries: Acute injuries and overuse injuries: Often, stated acute injuries are the result of a single traumatic incident. Popular instances include fractures, ankle sprains, dislocations of the shoulder, and strain of the hamstring muscle. While injuries from overuse are more prevalent in sports than acute injuries, they are gradual and usually occur over time, making them difficult to diagnose and treat. They are the result of the tendons, muscles, and joints getting repeated micro-trauma (4). Sports injuries are considered one of the most important problems facing practitioners, especially in the field of competitive sports, as competition to occupy advanced positions, especially in international competitions, calls for raising the level of training in terms of increasing the number Training units, intensity or duration as well as increasing training loads commensurate with each type of Sports This increases the burden on the athletes' bodies and thus increases the chance of sports injuries (5).

Sometimes the player or athlete gets injured for several reasons, it may be a sudden movement or exercise error or external factors leading to injury and many other reasons. The word "Injury" is derived from Latin and means damage or disability, The injury is a disruption and impediment to the integrity of the body's tissues and organs as a result of external influences (mechanical, physical, chemical) and usually this external effect is severe and surprising (6). Sports injuries is a name applied to all types of damage occurring in the course of sporting activities (7). Injuries are described variously. The most popular definitions are based on missed time from training or tournaments, or on medical treatment, described as injuries requiring treatment by a medical. This may or may not, however, result in time lost from training or competitions (8).

Sports injuries are one of the obstacles facing students during the application of the practical studying program, and their negative effects may extend to them in the field of difficulty in academic achievement, lack of match with the program, and the lack of competence necessary for them to continue to perform the skills as required, which leads to their failure to reach the desired level at the end of the studying year (9).

In recent years, the number of injured people of different ages who practice different types of sports has increased, and there are many types of sports injuries that a player or athlete can be exposed, such as (muscle rupture, sprains, fractures, convulsions, etc.). Sports injuries often occur in muscles, joints or bones. Sports injuries are a common term that refers to different types of injuries that occur during exercise and the athlete gets injuries if he performed exercises incorrectly, or when use low-quality tools, or not warm up before exercise, or exposure to fall, and fortunately most sports injuries It can be treated effectively, and many people can return to their sporting activity after injury if properly treated and under medical supervision (10).

The subjects in the colleges of physical education include two directions: theoretical lessons, practical lessons, and linking between these two directions are necessary and important to apply the information it takes from the theoretical side in the practical field. Usually, the student is exposed to injury in sports activities and practical applications because of the efforts imposed by the practical activity on the various body systems, especially the motor system that consists of bones, joints, muscles, and ligaments (11). And the researcher believes that the coaches of physical education should cooperate with specialists in sports medicine and physiology to develop the physical and functional capabilities of the player for better achievement, and in a manner that does not disturb the natural career system.

Training curricula and methods have developed for various sports specialties, and this process was accompanied by many developments in the field of sports medicine that accompanied the training with scientific studies of preventive and therapeutic sides, and despite this, sports injuries occur to different degrees, whether in sports competitions or practical lessons, which calls for a period of treatment that keeps the athlete away from his activity, which negatively affects physical and functional fitness and the level of achievement, causing some complications that may hinder the progress of the educational and training process. And the associated physiological and psychological effects on the athlete (12). From here emerged the importance of our research in terms of the increase in the number of injuries, the repeat of their occurrence, the pain caused by them, that cause the student getting far from the studying classes, and the loss of time by defining the type of sports injuries that occur students and in what parts of the body the injuries happen and their reasons.

### **3.2. Statement of the problem**

According to Andre, sports injuries are injuries that occur while playing, exercising, or running. Some are from accidents. Others can result from bad training or not enough warm-up practices. Some athletes get injured when they are not in good shape. Injuries may also result from not warming up or stretching sufficiently before playing, running, or exercising (13).

Riyadh, states that the types of injuries differ according to the type of sport. Team game injuries differ from injuries in individual games, and direct contact games such as (soccer, handball, basketball, boxing, wrestling) have more injury than the Games that do not involve direct contact such as (tennis, volleyball, etc.) (14).

The researcher noted through his experience as a weightlifting athlete for eight years in the past, then as a weightlifting coach at Zakho Sports Club for three years, and as a student in Faculty of Physical Education and sports, also through searching, reading, and studying many research in this field, he found that The percentage of sports injuries is on the rise among sports players and especially among students of Faculty of Sport Sciences, which push the researcher to conduct this study on students of Faculty Of Sport Sciences At Firat University, which is the first study in this field according to the researcher's knowledge.

### **3.3. Research questions**

1. What are the most common sports injuries in students of Faculty of Sports Sciences at Firat University?

2. What are the most parts of the body exposed to injury in students of Faculty of Sports Sciences at Firat University?
3. What is the most place of the body exposed to sports injury in students of Faculty of Sports Sciences at Firat University?
4. What are the common causes of sports injuries in students of Faculty of Sports Sciences at Firat University?
5. In which sport the possibility of sports injury is more in students of Faculty of Sports Sciences at Firat University?
6. What is the number of repetitions of sports injuries in students of Faculty of Sports Sciences at Firat University?
7. How long the hospitalization period takes in students of the Faculty of Sports Sciences at Firat University?
8. Are there any differences in the common sports injuries in students of Faculty of Sports Sciences at Firat University according to the variable of the department?
9. Are there any differences in sports injuries in students of Faculty of Sports Sciences at Firat University according to the variable of the grade?
10. Are there any differences in the common sports injuries in students of Faculty of Sports Sciences at Firat University according to the variable of the age?
11. Are there any differences in the common sports injuries in students of Faculty of Sports Sciences at Firat University according to the variable of the gender?
12. Are there any differences in the most body parts that exposed to sports injuries in students of Faculty of Sports Sciences at Firat University according to the variable of the department?

13. Are there any differences in the most body parts that exposed to sports injuries in students of Faculty of Sports Sciences at Firat University according to the variable of the grade?
14. Are there any differences in the most body parts that exposed to sports injuries in students of Faculty of Sports Sciences at Firat University according to the variable of the age?
15. Are there any differences in the most body parts that exposed to sports injuries in students of Faculty of Sports Sciences at Firat University according to the variable of the gender?

#### **3.4. Research importance**

And the researcher believes that the coaches of physical education should cooperate with specialists in sports medicine and physiology to develop the physical and functional capabilities of the player for better achievement, and in a manner that does not disturb the natural career system. From here emerged the importance of our research in terms of:

The increase in the number of sports injuries, the repeat of their occurrence, the pain caused by them, that cause the student to get far from the studying classes, and the loss of time.

The importance of research lies through defining the type of sports injuries that occur students, body parts that exposed to sports injury, their reasons, and defining the type of sport. Also, how many time the student exposed to injuries and how long the recovery period took.

### **3.5. Objectives of the study**

The research aimed to:

1. Determine the most common sports injuries in students of Faculty of Sports Sciences at Firat University.
2. Determine the body parts that most exposed to the sports injury in students of Faculty of Sports Sciences at Firat University.
3. Determine the most common causes of sports injuries in students of Faculty of Sports Sciences at Firat University.
4. Determine in which sport the possibility of sports injury is more in students of Faculty of Sports Sciences at Firat University.
5. Determine the number of repetitions of sports injuries in students of Faculty of Sports Sciences at Firat University.
6. Determine how long the recovery period takes in students of the Faculty of Sports Sciences at Firat University.
7. Determine the difference in common sports injuries in students of Faculty of Sports Sciences at Firat University. According to the variable of the gender, age, study grade, and department.
8. Determine the difference in the most body parts that exposed to the sports injury in students of Faculty of Sports Sciences at Firat University, according to the variable of the gender, age, study grade, and department.

### **3.6. Limitation of the study**

**Spatial domain:** Faculty of Sports Sciences at Firat University.

**The human domain:** the sample was chosen from students of the Physical Education Department and Coaching Department.

**Temporal domain:** for the period 15/11/2020 Until 20/12/2020.

### **3.7. Definition of Terms**

Injury = damage or a wound caused to a person's body (15). Injury is also defined as exposure of different body tissues to internal or external stimuli that lead to anatomical or physiological changes, or both, at the site of injury, which may disrupt or hinder the work of this part (6).

Sports injury = any injury incurred as a result of taking part in sports activity or training, e.g. a sprain, shin splints or tendinitis (15).

## **4. THEORETICAL FRAMEWORK AND PREVIOUS**

### **STUDIES 4.1. The Concept of Sports Injury**

There is no doubt that sports injuries are one of the important parts of sports medicine and complement the rest of the parts, and the history of injuries goes back to ancient times to the Egyptians, Romans, and Byzantines. As for in the current century the science of sports injuries developed with the development of diagnosis and rapid treatment and became one of the basic sciences for the development the athlete's capabilities and protection of injuries. Sports injuries are closely related to a group of sports and medical sciences such as sports training science, psychology, anatomy, physiology and others (9).

The word "Injury" is derived from Latin and means damage or disability (16).

“Sports injuries” is a name applied to all types of damage occurring in the course of sporting activities (7).

Sports injuries are different in nature and place that occurred to injury. types and causes of injuries are depending on the different types of physical activity that the player does. each sports activity has some degree of dangerous (17).

Athletes are injured in all games when scientific and technical conditions are not observed during training or competitions due to the constant effort on the various organs and parts of the human body, which hinders the development of sport because the injury constitutes a physical and psychological barrier that hinders the way to reach high levels of achievement. The proportion of sports injuries increases with increased competition or training as they put pressure on the joints, ligaments, synovial joints, tendons, muscles

and bones of the spine), Which may cause acute or chronic injury, and also injuries can occur in recreational sports, school sports programs and sports for the disabled (18).

According to Mohammed, tissues of the body are exposed to different internal or external influences and factors that lead to physiological changes in the affected part, which disrupts the work of that tissue temporarily or permanently according to the severity of the injury (2).

According to Orchard, Injury is a damaging risk that, most medical practitioners, coaches, athletes are mentioning it is an inevitable part of athletics. During their sporting careers, most athletes who compete in high-level sports suffer some sort of injuries. A coach seeking to avoid and treat athletic injuries has a special challenge to the multi-event nature of track and field because each event poses its own unique issues (19).

According to Ristolainen, sport injuries are injuries that occur during sports Competitions or exercise more commonly. Sometimes incidents lead to sports injuries, others are attributed to bad training practices, unsuitable equipment, and lack of conditioning, inadequate warm-up, and stretching. Popular injuries vary from sports to sports, such as American football, karate, judo, handball, ice hockey, and basketball. Sports can be different between nations, causing different injuries (20).

The researcher believes that sports injuries have a great interest in developed countries, because of their great importance in affecting the level of the athlete and so affects the level of the whole team, so these countries spend huge sums on the rehabilitation of athletes and specialists in sports injuries so that the player can quickly return to practice Sports.

## 4.2. Characteristics of Sports Injuries

Sports injury is not different from general injuries, whether the causative factors are physical exertion and the specificity of performance requirements in different sports activities, among its characteristics are (2):

The incidence of sports injuries depends to a large extent on the efficiency of the player's physical, functional, psychological, and well-prepared, the lower its efficiency the greater the possibility of injuries to him and vice versa.

The possibility of sports injuries during training increases in the absence of scientific supervision of the specialized trainer.

Sports injuries occur in competitions and training and the possibility of sports injuries in competitions increases, especially at advanced levels.

The incidence of sports injuries are increasing in team Games, especially Football, and Handball in contrast to individual games such as swimming and tennis. The incidence of injuries is significantly increased when violent and complex technical movements are made.

The incidence of injury is relatively lower in women than in men.

Injuries are frequent in young athletes, and injuries occur at all ages, but there are common injuries at certain ages and not others, for example (fractures, injury to muscles and joints, injury to growth centers at the ends of long bones) in adolescence.

Muscle injuries are more common in the age of maturity due to intense training or competition and because of the high ambition at that age, but at the age of over thirty, where the experience and skill but Physical fitness gradually decreases, and when the

player continues to practice his activity and because of the difficulty to reach the level of competition in such At this age, the player makes a great effort that may lead to injury, especially in the tendons of the muscles and ligaments of the joints and that the performance of skills properly and take the appropriate positions and the technique in its implementation protects the player from injury and at different ages, and on the contrary, some movements are dangerous when you put organs of the body under extreme pressure during performance, causing pain, as in some violent sports such as boxing, wrestling, and weight lifting, so it is necessary to stay away from overload in older ages (2).

### **4.3. Sports Injuries Ratings**

#### **4.3.1. Acute and overuse injuries in sport**

According to Junge and Dvorak, an acute injury is an injury caused by a large hit or as an injury that caused trauma, the reason being, for example, kicking, tackling, or running (21). It has also defined an acute injury as any injury or state that did not exist before the date of injury occurrence (1). Acute injuries have also been described as any physical injury that makes an athlete away from at least one training or competition session or requires the care of a physician (19).

Junge & Dvorak, have described overuse injury as an injury that is caused by the effects of repetitive microtrauma. Hrelja, described the Musculoskeletal system overuse injuries typically occur when a structure is subjected to a large number of repeated forces, each below the structure's acute injury threshold, creating a combined fatigue effect over a period of time beyond the particular structure's capabilities (21).

#### **4.3.2. According to the levels of injury severity**

If severe soft tissue damage occurs, injury severity may produce an unfavorable prognosis. For the patient to undergo persistent pathology or disorder, the existence of fracture or dislocation need not be present. In a survey of patients with headache symptoms, 27 percent were symptomatic six months after the accident, and another study found that 42 percent of their following were symptomatic two years' post-accident, on average (22). In a 15-year follow-up study, 70% of the patients continued to complain about symptoms attached to the accident 15 years later (23). These ranged between mild and severe. In a 2-year post-injury study that reported the prognostic importance of the initial severity of injury, this is much higher than the 27 percent that remained symptomatic (24).

The severity of the injury varies Depending on the sports activity practiced, and the injury is classified in terms of its severity, amplitude and impact on the human body (25):

1. Minor injuries: are injuries that do not hinder the player from performing on the field, nor do they affect the reduction in physical fitness, and these injuries occur by 90% such as: bruises, minor Wounds, and muscle contraction.
2. moderate injuries: are injuries that hinder the player from performing or prevented from completing matches or training. These injuries stop the player from performing for a period ranging from one to four weeks and their rate is about 9%, such as (muscle contraction in degrees, a muscle tear in degrees, ligaments tear in degrees). These rips do not include fractures.

3. Severe injuries: are very serious injuries that hinder the player completely from continuing to perform and these injuries range from one month to a year and may force the player to retire early and their rate is about 1% such as (fractures, dislocations, ligament rupture, slip and side of the knee).

**Table 1.** Classification of sports injuries according to their severity (mild, moderate, and severe)

<i>classification</i>	<b>Symptoms</b>	<b>Necessary procedures</b>
<b><i>Minor</i></b>	<ol style="list-style-type: none"> <li>1. Achievement is not affected.</li> <li>2. Pain after training.</li> <li>3. Mild stiffness in the area of injury.</li> <li>4. The color of the area does not change.</li> </ol>	<ol style="list-style-type: none"> <li>1. Reduce training periods.</li> <li>2. Reducing stress on the area of injury.</li> <li>3. Rest and initial treatment.</li> <li>4. Exercise gradually.</li> </ol>
<b><i>Moderate</i></b>	<ol style="list-style-type: none"> <li>1. Affect the delivery.</li> <li>2. Pain before and after training.</li> <li>3. The injury area softens a little.</li> <li>4. Mild swelling.</li> <li>5. A slight change in color in the area of injury.</li> </ol>	<ol style="list-style-type: none"> <li>1. Giving rest to the area of injury.</li> <li>2. Do not overstrain the area of injury.</li> <li>3. Rest with the initial treatment.</li> <li>4. Back to training gradually.</li> </ol>
<b><i>Severe</i></b>	<ol style="list-style-type: none"> <li>1. Constant pain before, during and after training.</li> <li>2. Affects achievement because of the severity of pain.</li> <li>3. Affects daily activity due to the severity of pain.</li> <li>4. Affects the normal state due to the severity of the pain.</li> <li>5. The intensity of the pain increases when pressure is applied to the area of injury.</li> <li>6. Swelling clear.</li> <li>7. A clear change in the color in the area of injury.</li> </ol>	<ol style="list-style-type: none"> <li>1. stop practicing sports activities completely</li> <li>2. See a doctor</li> </ol>

### **4.3.3. According to Open and Closed Injuries**

It is worth noting that the percentage of athletes who maintain their physical fitness after an injury and are able to continue to exercise sports is more than 80%, and injuries usually differ in the presence or absence of damage to the external surfaces of the body as they are divided into (26):

- 1. Open injuries:** lacerations occur on the surface of the skin, and the infection area is often exposed to pollution, and pain is the main sign of injury. In light injuries, pain appears only during severe tensions or during large-scale movements, so the athlete can in this case, continue training without feeling any pain in normal conditions, or even during high-intensity training, but in this case, the tissue does not heal in the affected area. Like cuts, burns, and scratches.
- 2. Closed injuries:** the surface of the skin is intact, but the injuries happen in the deep, such as muscle laceration, bruising, fractures, dislocations, internal bleeding, and other lesions with a wound.

### **4.3.4. According to the degree of injury**

#### **4.3.4.1. A first-degree injury**

It points to minor injuries in terms of severity that block the player or prevent him from completing the match, and it includes about 80 - 90% of injuries such as abrasions, bruises, and muscle cramps (27).

#### 4.3.4.2. A second-degree injury

It points to Moderate injuries in terms of severity Which prevents the athlete from exercising for a period of one to two weeks and often represents about 8% such as muscle rupture and ripped ligaments in the joints (27).

#### 4.3.4.3. A third-degree injury

It points to severe injuries, which completely prevent the player from continuing in the practice of the athlete for a period not less than a month, and rated one of the few injuries that occur about 1 - 2%, but they are dangerous, such as fractures of all kinds. The table below shows the symptoms and signs according to the degree of injury (27):

**Table 2.** The symptoms and signs according to the degree of injury

<i>Degree</i>	<b>symptoms</b>	<b>Signs</b>
<i>First-degree</i>	Pain after effort	Simple and localized pain
<i>Second- degree</i>	Pain in the beginning, and the pain disappears when you start exercising, and it appears after finishing.	Local pain with slight increase in motor effort when exercising.
<i>Third- degree</i>	Constant pain and getting worse with any activity and this leads to stop of exercising	Local pain, stopping of movement, weakness, and possibly muscle fibrosis.

### 4.3.5. According to The Type of Injury

#### 4.3.5.1. Skin Injuries

It is one of the common injuries that occur frequently among athletes in playground and the general public in daily life and to act in a timely manner reduces the increase of injury to it, and they are as follows (28, 29):

1. **Watery skin puffiness (Blisters):** it results from the skin's friction with a rough surface, resulting in the separation of the upper skin layers from the lower layers and a liquid appear between them.



**Figure 1.** Watery skin puffiness (Blisters) (69)

2. **Wounds:** It is cutting or lacerating the skin or the layer under the skin, and this cutting or lacerating causes severe pain, and in some cases, it leads to bleeding as a result of the damage of the blood vessels in the wound area.

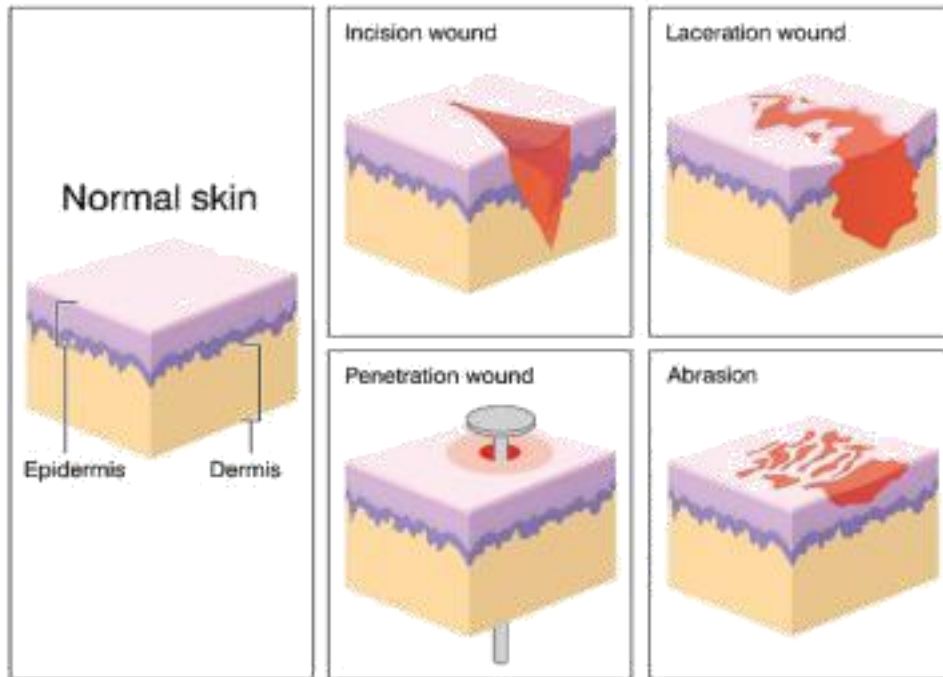
There are several types of wounds (29-31):

**Incision Wound:** It occurs as a result of exposure to an acute machine, such as a knife or shattered glass, and the edges of the wound are regular, with heavy bleeding in the area due to the cutting of a large number of blood vessels.

**Penetration Wound:** It occurs as a result of penetration of the skin with a sharp, pointed object such as a spear, a fencing weapon, or any thin, pointed object. It is characterized by a lack of blood accompanying the injury, but if it affects an internal organ or blood vessels, it turns into a very serious wound that may cause the death of the injured person, especially if one of the important organs has perforated such as the heart, liver, and spleen, and The depth of the wound also helps it contaminate with microbes easily.

**Laceration Wound:** It results from the player hitting a non-sharp object, such as stones, where a rupture of the tissues occurs, and the edges of this wound are irregular, with less bleeding, unlike the Incision wound.

**Abrasion:** is superficial wounds that occur as a result of exposure to severe friction on a hard or rough surface, and this is the simplest type of wounds.



**Figure 2.** The form of all types of Wounds (70)

#### **4.3.5.2. Muscle Injuries (The muscular system)**

Muscle injuries of all kinds are among the Frequently occurring and widespread injuries among athletes because muscles are the main tool implement That performs the requirements of physical performance and a major component of the human motor system (32), and divided into:

##### **4.3.5.2.1. Bruises**

Bruising is the crushing of tissues and different organs of the body such as skin, muscles, bones and joints as a result of direct injury to an external stimulus, pain, swelling, internal bleeding, and then leakage of blood plasma fluid are symptoms that often accompany bruises (33). It is considered one of the direct injuries and the most common among athletes. The incidence rate is 80-85% of all general injuries. Such as (32, 28).

**Bruises under the skin:** They do not cause anxiety, and are most common among bruises.

**Bruises inside the muscle:** This type affects The injured player's ability to move the muscle.

**Bruises that affect bones:** It is one of the most dangerous bruises, and this bruising occurs on the outer layer of the bones.

Bruises are mashing and tearing of superficial or deep tissues under the skin (between the skin and bone) and its causes (external shock or external violence such as collision with a solid body or the body of the player). Muscle bruising is one of the most important types of bruises due to its widespread. Bruises are defined as tissue mashing as a result of being subjected to severe pressure from external influence and It is one of the direct injuries, and it may lead to tearing some muscle fibers (34).

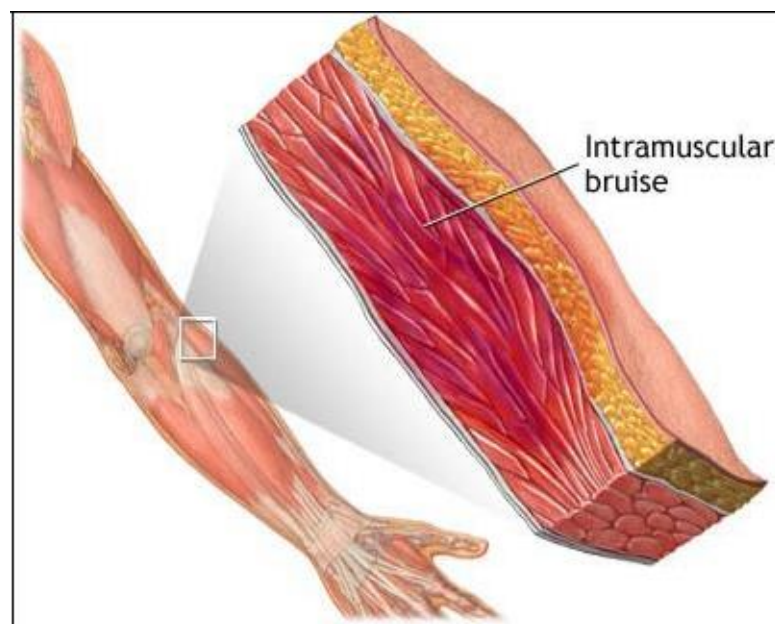
The bruise was divided according to the severity of the injury into two parts (27):

**Minor bruise:** where the player continues to perform and is not accompanied by any major physiological changes in the location of the injury, and there is no increase in the temperature the injured part.

**Severe bruise:** where the player cannot continue performing and is accompanied by major physiological changes in the site of injury, and the temperature of the injured part increases

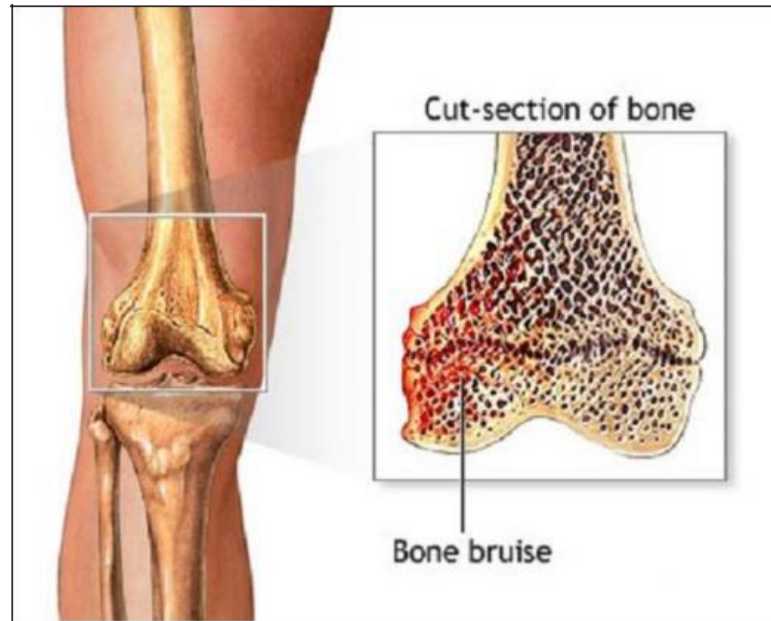
The bruises can be divided into four types, as follows (28, 27):

**Muscle bruise:** It is considered to be the most prevalent among other types and the most vulnerable muscles of the body are the thigh, leg, shoulder, hands, and knee joint, and muscle bruising is a direct injury or it occurs mashing and tearing of the fibers and muscle cells, which causes physiological changes in the location of the injury such as a tumor or bleeding and discoloration of the skin and High temperature.



**Figure 3.** The state of muscle bruise (71)

**Bone bruise:** The bruises of the bones are similar to the bruises that affect the skin and tissues, but different from muscle bruises as it is not visible, but rather they cause pain and weakness in the body. Most of the time, bone bruises precede fractures in the bone, in this case, the small tissues in the bones have broken.



**Figure 4.** The state of Bone bruise (72)

**Joint bruise:** This injury directly affects the performance of the player and it is considered one of the most serious injuries that can happen to the players and the most joints of the body exposed to this injury is the joints of the foot, knee, elbow, shoulder, wrist, and toes. It occurs as a result of Direct collision with a hard objects, a sudden fall of the joint on a solid object, or violent beats.



**Figure 5.** The state of joint bruise in the ankle from inside (73)



**Figure 6.** The state of joint bruise in the ankle from outside (74)

**Nervous bruising:** Nerve bruising: This type of bruising occurs to nerves in the surface areas of the body such as the ulnar nerve at the elbow or the thigh muscle nerve just below the knee.

#### **4.3.5.2.3. Muscle Cramps**

Muscle cramp is defined as a sudden cramps and painful muscle and make it difficult for the muscles to perform. Muscle cramps are injuries that most people experience at sometimes in their life. Athletes can occur to muscle cramp during or after finishing of exercises or competition, such as a football with extra time, or a long-distance run, athletes may get cramp in a muscle (35). also it can be defined, it is a localized increase in the incoming nerve signals for the muscle or Infected muscles, which causes a physiological change in ions and Shipments outside the walls of muscle cells and leads to a sudden and painful contraction of those muscles (28).

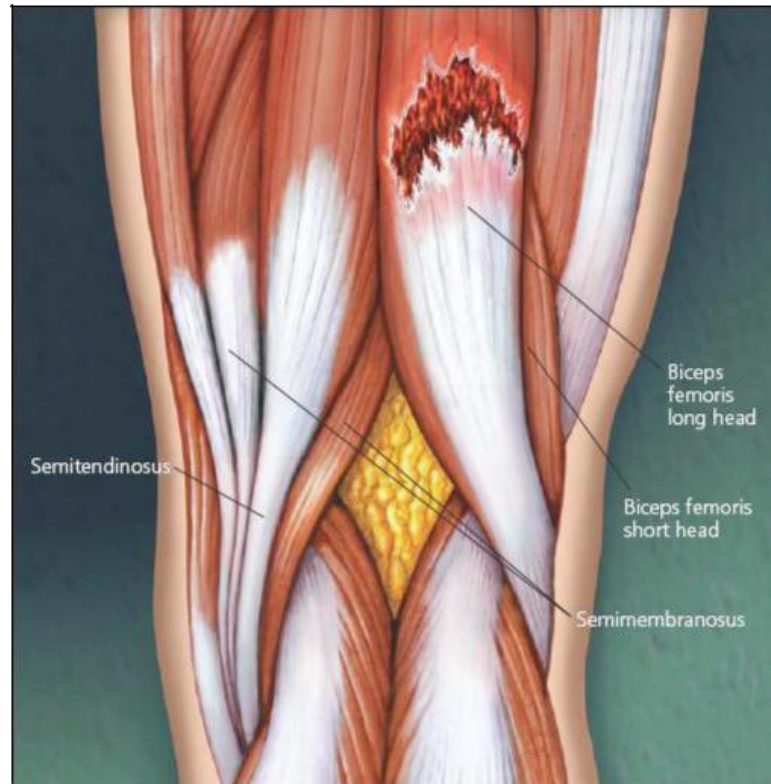


**Figure 7.** The muscle when it is in a state of muscle cramps (75)

And It occurs as a result of a lack of oxygen in the muscle, cold, equilibrium of salts, especially sodium chloride, and deposition of lactic acid - and it lasts for a few seconds or minutes (28).

#### **4.3.5.2.4. Muscle Rupture**

It is the tension or tear of the muscle fibers, tendons, or bag envelope around muscle as a result of intense, violent, and sudden muscle effort, to a greater degree than the muscle's ability to withstand this effort (36).



**Figure 8.** Muscle rupture at the second degree in the back side of the Thigh (76)

Injuries are considered tearing muscles are one of the widespread and occurring injuries among athletes, due to the reason that muscles are the main tool implementing the requirements of sports performance, where it is one of the main factors in human movement. The scientists' of sports medicine and injuries Divides muscle rupture to three degrees (Simple muscle rupture, intense muscle rupture, complete muscle rupture) (36). And those three degrees are (6, 28):

**Simple muscle rupture:** a minor portion of the muscle fibers is damaged as a result of muscle effort or trauma and does not affect its work and is cured with a short period and without complications. where the thin fibrous membrane is ripped and the player has ability to continue perform, but may feel slight pain afterward (37).

**Intense muscle rupture(partial):** where a large numbers of muscle fibers are damaged and fter hours, a small swelling appears which affects their movement and the player feels pain, but the muscle continues to move. In a state of a severe pain the athlete cannot continue to performing (38).

**Complete muscle rupture:** Damage or rupture occurs in most muscle fibers, especially in the middle of them and the tendons, or the entire muscle gets rupture, which causes the muscle to stop working. It is considered the most serious muscle damage that may occur to an athlete, and it begins with severe pain and complete paralysis (39). The most muscles vulnerable to rupture are (Shoulder muscles, The trapezius muscle, Abdominal muscles, quadiceps muscle Gemellus Muscle).



**Figure 9.** The three degrees of muscle rupture (Simple muscle rupture, intense muscle rupture, complete muscle rupture) (77)

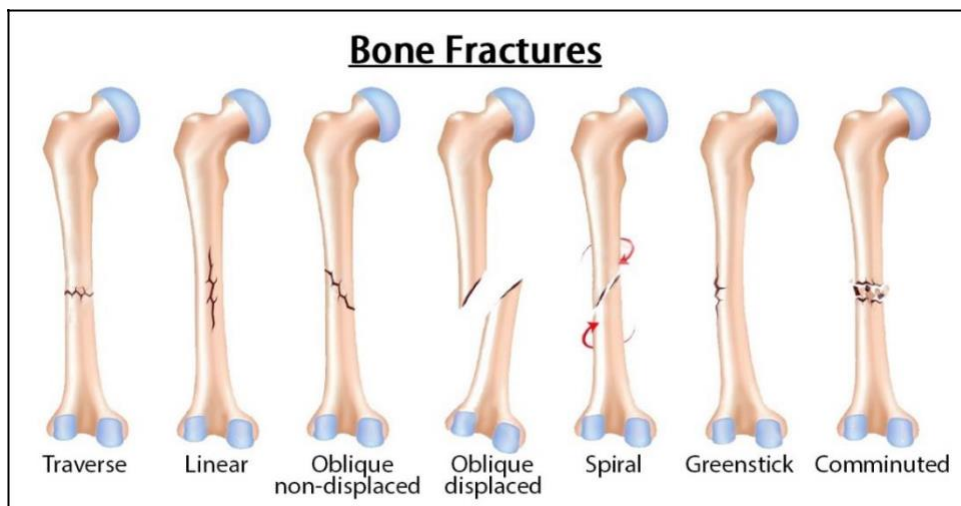
#### **4.3.5.3. Bone Injuries (The skeletal system)**

It occurs due to direct violence, strong collision, intentional roughness, or violent fall, causing pressure or crushing of bones (2).

#### 4.3.5.3.1. Fractions

A fracture is a separation of the bones from each other into one or more parts it might be a complete or incomplete break in a bone as a result of exposure to strong external forces (external violence) or collision with a hard object (6, 40). Loss of bone continuity, or is the separation of the bone into two or more parts, and fractures occur as a result of external severity ( excessive force or trauma) leading to a break or separation of the bone parts. And it is in different forms, but it may sometimes occur as the end result of chronic bone overload. And fractures are common injuries in many sports. (2, 6, 40).

Zahir, Youssef, and Abdul, agree that fractures are differ according to the severity of injury, and among the most important types of fractures that occur during sports practice are (Traverse fracture, Linear Fracture, Oblique Fracture, Spiral Fracture, Greenstick Fracture, Comminuted Fracture) (31, 41, 42):



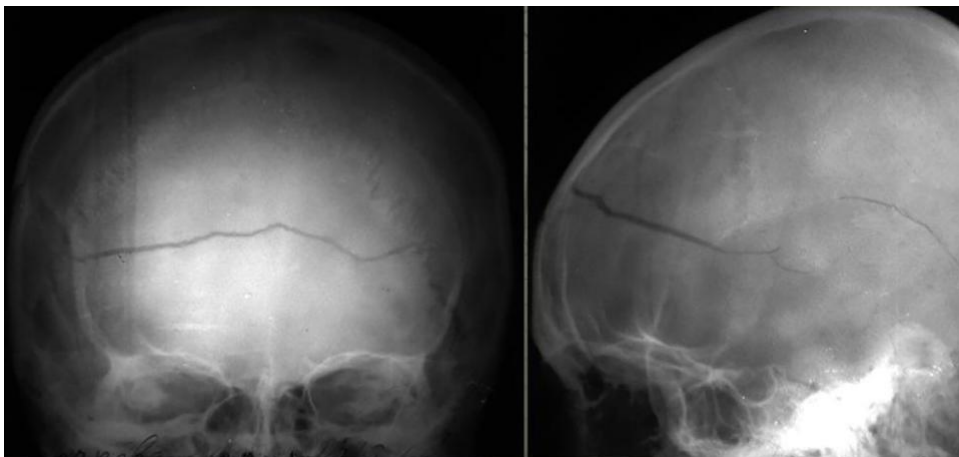
**Figure 10.** The types of bone Fractures (78)

1. **Transverse fracture:** Occurs straight across the long axis of the bone.



**Figure 11.** Transverse fracture of the Radius bone in the Forearm (79)

2. **Linear Fracture:** The break is parallel to the bones long axis, where it is in the form of a straight line that goes through the middle of the bone, and that is due to a direct external blow



**Figure 12.** Linear fracture of the Skull (80)

3. **Oblique Fracture:** the break has a curved or sloped pattern and it has two looks nondisplaced and displaced. It occurs as a result of a fall from a high distance, causing the longitudinal bone to receive a large force directly through the vertical axis. This type of fracture needs urgent care to ensure that the bone length and Natural shape are preserved.



**Figure 13.** Oblique Fracture of the Femur bone in the Thigh (81)

4. **Spiral Fracture:** Where the broken bone wraps. Where the separation of the bone is in the shape of the letter S, and it is common among football players and ice skating players, where the foot is fixed to the ground and the body suddenly rotates in the opposite direction, which makes it deviates from its original position.



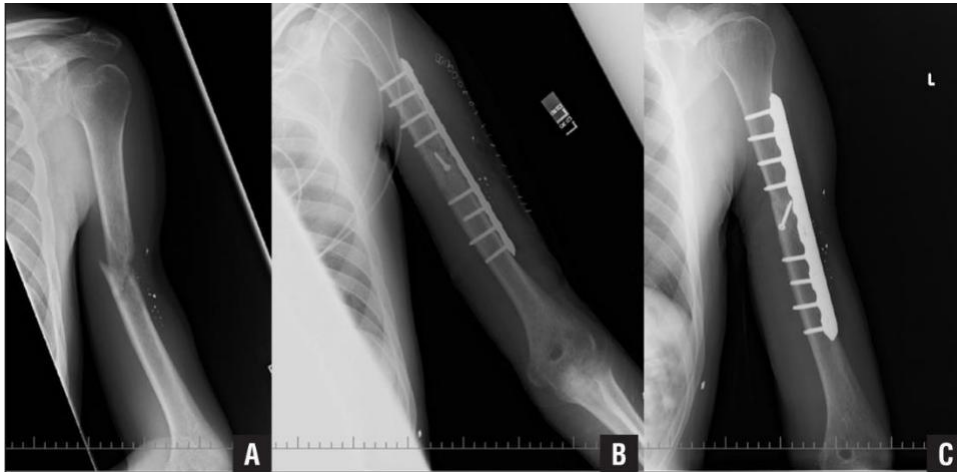
**Figure 14.** Spiral Fracture of the humerus bone (82)

5. **Greenstick Fracture:** This type is not a complete break of the bone, rather it is a sprain or a crack in the bone, and it often occurs to children and young athletes because of the softness and flexibility of their bones, and also occurs in the bones with a convex surface, which are not completely calcified. Where it breaks from the convex side and remains intact on the concave side.



**Figure 15.** Greenstick Fracture of the Radius bone in the Forearm (83)

- 6. Comminuted Fracture:** The bone breaks and divided into more than two parts, and sometimes some small parts of the bone diverge from each other (from the right place), and most of the time, a surgical intervention is needed to restore these parts to their correct place.



**Figure 16.** Comminuted Fracture of the Humerus bone (84)

#### 4.3.5.4. Joint Injuries

The joint composed of the meniscus between the opposite ends of the bones around the joint surfaces. Joints differ in construction. Usually, one end is convex and called the head of the joint, while the other is concave and called the socket of the joint, and they fit together more or less. In the joint of the hip, the joint socket almost completely surrounds the head of the joint, while it is less deep in the shoulders, fingers, and knees (35).

The ends of the bones are connected by a joint capsule made up of connective tissue. The inside of the joint capsule is lined by a synovial membrane that secretes synovial fluid. In some places where the stress is high, the joint capsule is strengthened

by a tight bands, which are a connective tissue ligaments that strengthen and protect against the excessive movement. The joint also surrounded by the strings of muscles (35).

Joint injuries are the most common in the sports field, due to the movement that the athlete performs. Articular injuries are common in team games such as (football, basketball, volleyball, handball) as well as in individual games such as (fencing, boxing, wrestling, gymnastics, tennis) and in recreational sports such as (jogging and walking)

(2). Joint injuries can be divided into several types:

#### **4.3.5.4.1. Sprains**

It is a complete or partial tear of one or more ligaments of the joint as a result of a temporary displacement, and it is usually occurring the wrist and ankle joint. It is one of the most common injuries in sports stadiums and often occurs in team games or it can also occur in any other game. This type of injury occurs as a result of falling on one of the limbs or stumbling while walking or running, as the joint comes out of its natural place and then returns to its place at the same time (43).

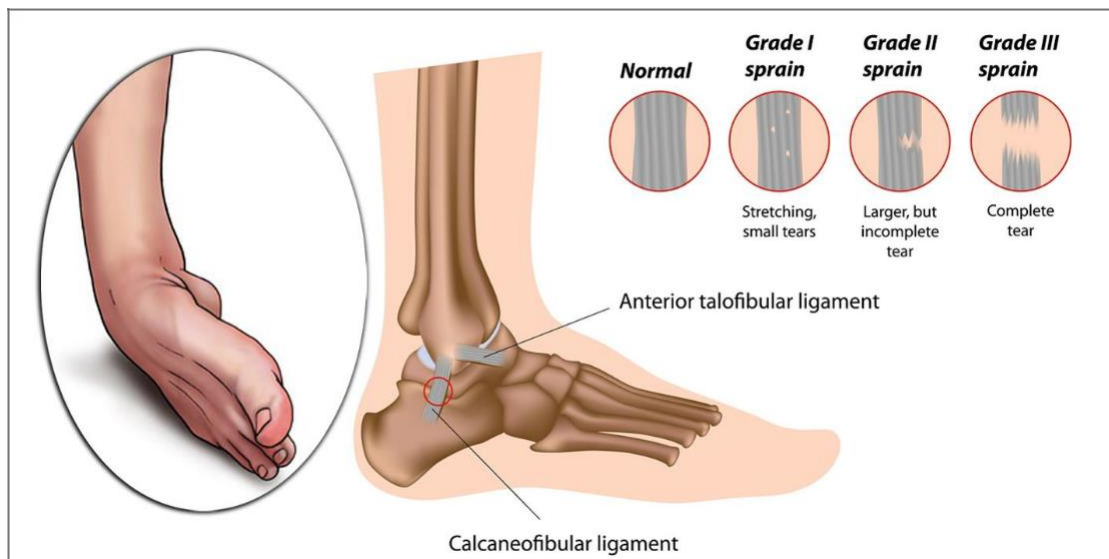
A sprain can also be divided into three degrees and according to its severity, as follows (43):

First-degree: It includes the rupture of a small number of ligament fibers and without complications in joint movement.

Second-degree: It includes rupture of the ligament fibers by 5-95%, but without rupturing the ligament and may affect the stability of the joint. There may be an increase in synovial fluid within the joint, slight inflammation and bleeding

in the synovial membrane and between the joint tissues, especially the area surrounding the ligament on the affected side.

Third-degree: It includes a rupture of the entire ligament or ligaments, and a dislocation may occur in the joint or even if the ligament is not broken, and a fracture may occur in the ligament area of the bone.



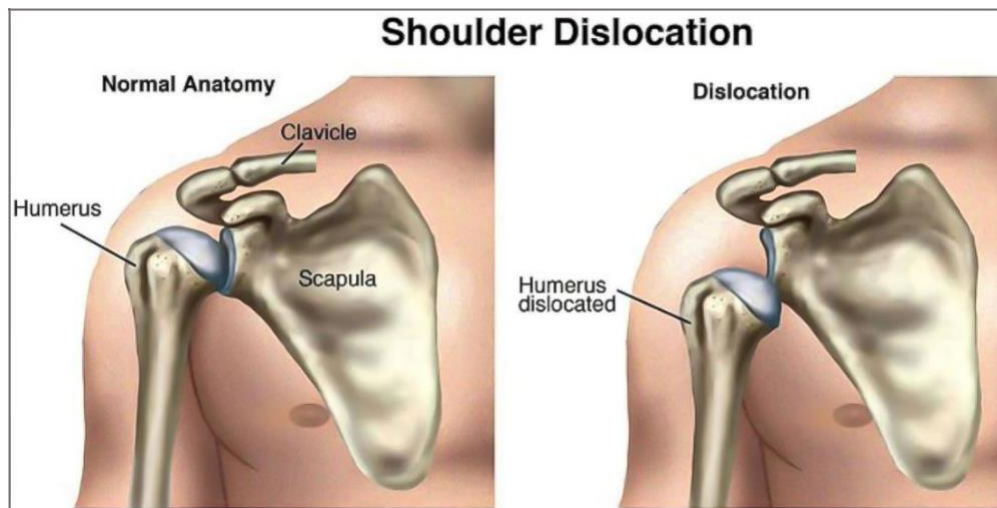
**Figure 17.** Sprain and its degrees (85)

#### 4.3.5.4.2. Dislocations

It is the spacing of the separated bones from one side partially or completely, and the joint exit from the place of its natural articulation (44). According to (It is a partial or complete spacing of the opposite joint surfaces from each other, and it occurs as a result of the Continue the movement with a range greater than their normal range, which causes dislocation. As the rupture of some of the ligaments of the joint leads to a partial dislocation. or a completely rupture of the joint ligaments lead to a total dislocation occurs (45). And there two types of dislocation (35):

**Complete dislocation:** Means that the surfaces of the opposite joints are completely separate, and they are disconnected, this type usually occur the elbow joints, shoulder joints, kneecaps and finger joints.

**Incomplete dislocation:** Means that the joint surfaces are partially connected, but they are not located to each other correctly, and this type most occur in the ankle and knee joints. It is possible that the joint between the shoulder and collarbone blade may suffer incomplete or a complete dislocation.



**Figure 18.** Joint dislocation form of the shoulder (86)

#### **4.4. The Causes of Sports Injuries**

The type of injury gets different according to the type of sport. the injuries of Individual games are different from injuries of team games, men injuries are different from women injuries, and games with direct friction differ from games that do not have direct friction. The injuries also differ according to the nature of the performance in the game, for example, the injuries of the lower limb in football are more than the injuries of the upper limb of the body, and the higher the level and size of the competition, the greater the probability of injuries. Also, injuries differ according to the player's physical

efficiency, and the psychological state and sports culture play an important role in the possibility of injury (41).

#### **4.4.1. General Causes of Sports Injuries**

1. **Wrong training:** Where incorrect training leads to injuries.

2. **Bad sports supplies:** It includes:

The inappropriate playground, the presence of solid bodies in it, or wrong way of Water sprayed.

Bad shoe selection, as each game has the right type of shoes.

non-using the correct and appropriate tools in sports and according to the type of game, as there must be a fit between the player's age and the tools used in the athletic activity.

3. The bad moral and psychological state of the player and away from sportsmanship.

4. Violation of the laws of sports: As the goal of the sports law is to protect the player and ensure his safety and violating these laws lead to injuries in stadiums and the like, as violating the technical and legal aspects of sports equipment leads to the player's injury.

5. non-observe the doctor instructions and medical checks and tests for the player's evaluation Physiologically and physically that are carried out in sports medicine centers, and there are many accidents and injuries that resulted from the selection of the player who is inappropriate Physiologically and medically to participate in the games, that taking the correct player selection principles is the secret behind breaking many World records.

6. The use of steroids leads to functional fatigue, which exposes the player to many injuries, as the player makes an effort that is not suitable to his physiological and physical ability.
7. Not enough rest between exercise or not sleeping long enough.
8. The player must be familiar with general sports injuries, act right when they occur, and familiarize themselves with the safety and security rules in the sport he plays (41).

However, we note that if the coach is aware and aware of the general causes of sports injuries that have been mentioned, then his role in reducing and preventing injuries is easy because knowing the cause of injuries makes him take appropriate measures to prevent their occurrence (41).

#### **4.4.2. External factors that causing sports injuries**

1. Poor organization and training method: These two factors are related to Lack of interest to the guiding principles of education by the trainer or teacher such as regular training, and gradual increase in physical exertion and the most important manifestations of the violation of the training rules and poor organization leading to injury are:

Rush to workouts and the constant practice of violent training.

Misjudgment of the regular work in tactical terms and the incorporation of some exercises that the athlete is not ready for, either because of his lack of athletic ability or because of fatigue in previous training.

Bad warm-up and Non-gradient of skills.

2. Disadvantages of organizing exercises and competitions:

Following the wrong instructions for the training, as well as the insurance rules and the wrong planning of the competitions programs or not to implement them.

Failure to consider individual characteristics, competency, and readiness in terms of age, weight, and gender.

3. Violation of security laws and conditions: meant the condition of stadiums, and the places where the athletes are practicing, the athletic equipment and the poor quality of the sports equipment and equipment.

4. Bad weather conditions: Not alerting to bad weather and Not to be prevented, leads to injuries and the most important of these are:

Training in extreme weather conditions such as high temperature or during rain and snow.

Failure to observe the proper lighting and ventilation in closed halls. Insufficient adaptation in the mountainous highlands.

Not taking sufficient care regarding training and competitions, depending on the weather state.

5. Inappropriate behavior and loss of sportsmanship.

6. Failure to commitment to medical orders.

Allow the player to practice training and play without a medical examination and non-commitment the coach and the player to the doctor's special directions after injury.

Failure to comply with the medical guidelines for the daily regimen, feedback system, rest, and others (46).

#### **4.4.3. Internal factors that causing sports injuries**

There are changes that appear on the player's condition, not during training or competition, but also from the effect of bad internal causes that lead to sports injuries, and from these reasons (47):

Severe state of exhaustion and fatigue.

Changes in the functional condition of some body systems.

Biological mechanical properties.

Lack of physical preparation for the athlete.

#### **4.4.4. Physical factors causing sport injuries**

Physical injuries are caused by multiple forces, thereby affecting various parts of the body. Exposure to injuries and rehabilitation differs Depending on sports and athletes. Injury levels are often different between athletes, so there can be many ways to deal with injuries. the treatment has to depend on the level of injury and combination of physical and psychosocial factors (48).

Physical injuries also occurs because of problems with muscle imbalance, high-speed crashes, overtraining or physical exhaustion (49).

The identification and involvement of sports varies between the Eastern and Western Hemisphere. Cultural misunderstandings can be generated by personal goals and managing distinct situations during special events or during training tours abroad. Usually competitions are against athletes from other nine cultures who have been practicing and living with the regulations and limitations of their culture. Therefore, athletes from different cultural backgrounds respecting each other. Injury orientation and

trauma rehabilitation are directly connected to cultural contexts, consisting of an athlete's local regulations and how he has been trained to behave in different circumstances. An athlete may be either task-oriented or ego-oriented, and this affects the outcomes of any injury rehabilitation. When all these cultural, ethical and other problems are mixed together, it can be difficult for others to grasp the outcome of an athlete coping with an injury with various backgrounds (50).

#### **4.4.5. Psychological factors causing sport injuries**

Psychological factors are often included in addition to physical factors. e.g. these factors are the level of stress and certain predisposing attitudes (51).

Sometimes the participants in the sport face stressful situations such as compulsory practice or a crucial competition. These factors include stressors (such as stress of life events, daily troubles, and history of previous injury), personality characteristics, for example (audacity, position of control, sense of responsibility, anxiety about competition, achievement motivation, and a search for sensation) and coping resources, for example (General coping behaviors, stress management, social support, medication, and mental skills) interactively or in isolation contribute to the stress response. The main hypothesis of the model is that when put in a difficult situation, people who have been exposed to multiple stressors, personality patterns that appear to aggravate the stress response, and little coping mechanisms will rate the situation as more stressful and show greater physiological activity and attention problems compared to people with the opposite psychosocial profile (52).

Self-determination theory (SDT) is a theory based on human motivation, personality improvement, and well-being. The focus of the theory is on self or volitional behavior, and the cultural and social conditions that reinforce it (53).

One of the ways to reduce your risk of injury is to learn about the psychological factors associated with injury. In different situations, Psychological reactions are individual, for example (loss of hope, fear of re-injury, isolation, lack of attention, depression or negative relationships) (54).

These conditions must be taken very seriously, and with the help of a psychologist, can be avoided and processed. Previous problems with physical symptoms, such as pain, can lead to serious complications. These can be processed with professionals of physical and psychological rehabilitation (55).

Stress management is important, especially during the rehabilitation process. For spectators, it can be sometimes difficult to understand the injury that occurred the athlete (56).

There are many problems that occur in an athlete's life that make him suffer from an injury, so it is better to discover these problems. The athlete has the opportunity to return to his place after a period of recovery - if the return plan is achievable and worth a try. If the athlete is afraid that someone else will take his place, it may have an effect on his healing process. This fear can be removed by making promises to the athlete that he can return anytime - for sure. Therefore, an athlete's feelings can differ a lot. It is also possible to give a description of this case from five stages of what athletes go through during the recovery process from his injury. These stages are (depression and acceptance and reorganization, denial, bargaining, anger). There are also general categories of

emotional responses (processing information related to injury, emotional distress, reactive behavior, positive expectations, and adaptation). Other reactions are loss of identity, fear and anxiety, decreased performance and lack of confidence (51).

Sometimes people think that the healing process is only a surgical and natural treatment. This is just a part of the infection period. Often the athlete needs psychological care and many feelings to be given. And this could be the most important part of the healing process. It can be very important for the athlete to reach the same level in the sport he is practicing - before the injury occurs. If the athlete's body is ready to return, but psychologically not ready, he will not be able to properly manage and maintain his performance level (57).

#### **4.5. Previous and similar studies**

##### **4.5.1. A study of Majed M. Rami H. and Walead A. (2008)**

###### **“The Most Common Sport Injuries for Track and Field Players”**

This study aimed to identify the common sports injuries among Arab athletes, according to the gender variable and the type of activity (track, jumping, and throwing), also the most parts of body exposed to injury, the time of injury, and the most common causes of injuries. The researchers used the descriptive approach for its suitability to the nature and aims of the study. The study sample consisted of 84 male and female athletes from different Arab countries participating in the fifteenth Arab Athletics Championships, included 49 males and 35 females. The researchers used a sports injury questionnaire that he prepared and used in a variety of reviews studies. Percentages, frequency and chi-square were used in the statistic process. The results of the study

indicated the prevalence of sports injuries among Arab athletics players, and that the most types of competitions that the athlete exposed to injury are the throwing activities, followed by the jump. As for the gender variable, there are no differences between males and females in sports injuries, and the most injuries frequent were during training times more than in competitions. The results of the study also showed that the most common causes of injuries are lack of good warm-up and over-training (58).

#### **4.5.2. A study of Mohanad Z. Majed M. and Suhaib B. (2012)**

##### **“The Common Sport Injuries among Kata Players in the Kata Game in Jordan”**

The study aimed to identify the most common injuries in kata players in karate sport in Jordan, their locations and causes depending on the state of defense and attack, the severity of the injury, in addition to the most important preventive instructions from sports injuries, and the study aimed to identify the differences in the incidence of injuries according to the time that occur to injury (Training, competition) and depending on body parts (upper limbs and lower limbs). In order to achieve the aims of the study, the researchers used the descriptive approach for its suitability to the nature and aims of the study. The sample of the study included (147) athletes which represent (9%) from the total number of the study community. After distributing the questionnaire to the athletes and making a personal interview with them, Percentages and frequency were used in the statistic process. After analyzing the data, it was found that the most common injuries according to the study variables for the kata group were muscle cramps and bone bruising. The most exposed parts to the injury of the body were the thigh and back. As for the most important cause of the injury, it was a lack of good warm-up. The most period in which

injuries occurred was the training period, and the most vulnerable parts were in the lower limbs (59).

#### **4.5.3. A study of Majid Fayez Majali and Majid Salim Al-Saleh. (2007)**

##### **“Analytical study of the causes of sports injuries in players of national teams according to the periods of the sports season in Jordan”**

This study aimed to identify the most important causes and percentage of sports injuries, the areas most exposed to injury and the types of sports injuries, also identifying the most common types of treatment used by players of the first national teams according to the periods of the sports season in Jordan, and according to the gender, game type and training age. The two researchers used the descriptive approach in its survey style, and the study community consisted of (291) male and female players for the 2004-2005 sports season. Where the sample was 8.77% of the study community. After analyzing the data, it was found that the most common cause of sports injuries among players of national teams is the lack of regular medical examinations, at a rate of 8.26%. and that there are statistically significant differences in favor of males and in favor of individual games. As for the most common sports injuries, contractions were 19.40% of the total. It was found that the ankle is the most exposed area by 10.60%, and it was found that the most frequent injuries were in the preparation period, at 54.89%, and that the most used type of treatment is physical therapy, at 56.10% (60).

#### **4.5.4. A study of Al-Barzanji, Zainab Abed and Wafaat Khayoun. 2016**

##### **“Analytical study of the most common sports injuries for some clubs in Wasit Governorate in games (gymnastics - weightlifting - boxing) for the last two seasons”**

The study aimed to identify the number of sports injuries common to some clubs in Wasit governorate in games (gymnastics, weightlifting, boxing) for the last two seasons (2013-2015), the places of injury, and the most common sports injuries. And also analyzing of the causes of some sports injuries common. The researcher used the descriptive approach, and conducted the research on a sample of Al-Koot Sports Club players in games (gymnastics with 8 players, weightlifting with 10 players, and boxing with 10 players) and also those suffering from sports injuries and they were chosen by the deliberate method. The most important conclusions that the researchers knew were:

There was significant differences between the three sports (gymnastics, weightlifting, and boxing).

No significant differences found in sports injury sites

No significant differences found for the type of sports injury.

No significant differences found for the causes of sports injuries (61).

## **5. MATERIALS AND METHODS**

This chapter includes a description of the method that the researcher used to determine the study community and its sample and tools.

### **5.1. Research Method**

The research aimed to define “Investigation of sports injuries and their causes in students of Faculty of Sport Sciences at Firat University”, where the researcher used the descriptive survey approach, and the survey technique was used, to its suitability and the nature of the research. In addition to that, the researcher used a questionnaires form that used before in a study prepared by Nada (9).

To achieve the goal of the study, the study population chosen from Faculty of Sports Sciences students, which is divided into four Departments, the researcher study includes only two Departments (Coaching and Physical Education) and the total number of sample was (627) male and female students and the researcher took 252 (40.19%) of male and female students from the total number in the academic year 2020-2021. The researcher used Chi-Square, Cronbach's Alpha, Frequency, and Percentage in statistical to obtain data by using (SPSS) software.

### **5.2. Research population**

The research population consist students of Faculty of Sports Sciences at Firat University, which is divided into four departments (Physical Education, Coaching, Recreation, and Sports management). the researcher work applied to only two Departments (Physical Education and Coaching) and the total number of the sample is (627) male and female students.

### 5.3. Research Sample

The sample of the study was chosen from two departments out of four which are (Physical Education and Coaching) in the Faculty of Sports Sciences at Firat University, and the researcher took 40.19% which is (252) male and female students from the total number of students in both departments.

**Table 3.** The sample of the study

Sciences	Department of Education	Male students	58	<b>85</b> student	total Sample
		Female students	27		
Faculty of Sports	Department of Coaching	Male students	105	<b>167</b> student	Student
		Female students	62		
					<b>252</b>

### 5.4. Questionnaire

A questionnaire was used to collect data not only because it is a popular means of collecting all kinds of data in research, but also an appropriate instrument to obtain information about conditions, practices, and problems for relatively large sample studies (1).

In order to collect the necessary data, a questionnaire was adopted for students. which has been taken from a scale belong to Nada (9) and then developed by taking the experts opinions and suggestions to be more suitable for research requirements.

The questionnaire contained two sections:

Section one: Personal Information, include (Gender, Age, Height, Weight, In which section is the specialized game that you play, Department, study grade).

Section two: questions related to sports injuries, include seven questions:

- in which of the following sports, have you been injured more?
- Which part of your body exposed to sports injured?
- According to what you selected in (Question two) where did the injury happen to you?
- What type of the following injuries happened to you?
- In your opinion, what are the most common causes of sports injuries?
- How many times have you been injured?
- How long the recovery period took?

### **5.5. Development of the questionnaire**

In order to collect data, the researcher used a questionnaire prepared by Nada (9) and made some necessary changes and divided into five fields in its initial form (type of sports, the affected body part, types of injuries, the causes of injuries) and developed it to be more suitable for the study. The following steps have been took while preparing and developing the scale and taking experts opinions:

Experts opinions have been requested for the suitability of the determined paragraphs, and if there are unsuitable paragraphs or features, and if there is any paragraph need to be change, add or remove.

After the scale delivered to the experts, their opinions had taken, and the necessary corrections had made to the questionnaire, a draft of the questionnaire has been created. After completing the draft, an exploratory experience has been made for evaluation and the process has been started in line with the opinions of the experts.

After the researcher made all the necessary edit and corrections on the scale. It distributed to students of both departments (Physical Education and Coaching Education) of Faculty of Sports Sciences at Firat University.

#### **5.6. Reliability of the questionnaire**

After the researcher made all the necessary edit and corrections on the scale according to opinions of the experts. In order to ensure the reliability of the questionnaire, the researcher presented the questionnaire to a sample of (30) students divided to (15) male and (15) female student, that did not include in the original sample of the study. And the researcher used the Cronbach's Alpha and the reliability coefficient reached (0.855) as shown in Table 4:

**Table 4.** Cronbach's Alpha Analysis Results for the Scale

No.	subscale	items	Cronbach's Alpha
1	Type of sports	12	.873
2	Body part exposed to injury	14	.781
3	Place of injury	4	.819
4	Type of sports injury	7	.840
5	Causes of sports injury	19	.829
6	Repetition of injuries	4	.938
7	Recovery period	4	.905

## 6. RESULTS

This section includes presenting the results of the study according to the Arrangement of questions that were placed for this study by the researcher, as the data were collected and processed using the SPSS program. Which is as follows:

1. Results of the question one, which is:

“What are the most common sports injuries in students of Faculty of Sports Sciences at Firat University?” to answer this question, the researcher use (Frequency and percentage) in the data analysis and the results were as the table 5:

**Table 5.** Frequency and Percentage of Sports Injuries in students of Faculty of Sports Sciences at Firat University

<i>No.</i>	<i>Sports Injury</i>	<i>Frequency</i>	<i>Percentage %</i>
<i>1</i>	Sprain	143	30.89
<i>2</i>	Cramp	75	16.20
<i>3</i>	Fracture	63	13.61
<i>4</i>	Rupture	59	12.74
<i>5</i>	Wound	55	11.88
<i>6</i>	Dislocations	54	11.66
<i>7</i>	Bruises	14	3.02
<i>Total</i>		<b>463</b>	<b>%100</b>

It can be seen in the table 5, that the most common sports injuries in students of Faculty of Sports Sciences at Firat University were Sprain (30.89%), Cramp (16.20%), Fracture (13.61%), and Rupture (12.74%) and the less sports injuries were Bruises (3.02%), Dislocations (11.66%), wound (11.88%).

From the result we found that the most common sports injuries are (Sprain, Cramp, Fracture, and Rupture)

2. Results of the question two, which is:

“What are the most parts of the body exposed to injury in students of Faculty of Sports Sciences at Firat University?” To answer this question, the researcher use (Frequency and percentage) in the data analysis and the results were as the table 6:

**Table 6.** Frequency and Percentage of body parts that exposed to sports injury in students of Faculty of Sports Sciences at Firat University

<i>No.</i>	<i>Body parts</i>	<i>Frequency</i>	<i>Percentage %</i>
<i>1</i>	Ankle	104	20.12
<i>2</i>	Leg	76	14.70
<i>3</i>	Hand and Wrist	73	14.12
<i>4</i>	Foot	67	12.96
<i>5</i>	Knee	59	11.41
<i>6</i>	Head and Face	35	6.77
<i>7</i>	Shoulder	22	4.26
<i>8</i>	Forearm	20	3.87
<i>9</i>	Back	19	3.68
<i>10</i>	Thigh	12	2.32
<i>11</i>	Neck	11	2.13
<i>12</i>	Hip	10	1.93
<i>13</i>	Humerus area	5	0.97
<i>14</i>	Chest	4	0.77
<b><i>Total</i></b>		<b>517</b>	<b>%100</b>

It can be seen in the table 6, that the most body parts that exposed to sports injury in students of Faculty of Sports Sciences at Firat University were Ankle (20.12%), Leg (14.70%), and Hand and Wrist (14.12%) and the less body parts that exposed to sports injury were Neck (2.13%), Thigh (2.32%), Back (3.68%).

From the result we found that the most body parts that exposed to sports injuries are (Ankle, Leg, and Hand and Wrist)

3. Results of the question three, which is:

“What is the most place of the body that exposed to sports injury in students of Faculty of Sports Sciences at Firat University?” To answer this question, the researcher use (Frequency and percentage) in the data analysis and the results were as the table 7:

**Table 7.** Frequency and Percentage of the most place of the body exposed to sports injuries in students of Faculty of Sports Sciences at Firat University

<i>No.</i>	<i>Body area</i>	<i>Frequency</i>	<i>Percentage %</i>
<i>1</i>	Joint	111	31.71
<i>2</i>	Muscle	95	27.14
<i>3</i>	Bone	91	26
<i>4</i>	Ligaments and Tendons	53	15.14
<i>Total</i>		<b>350</b>	<b>%100</b>

It can be seen in the table 7, that the most place of the body that exposed to sports injury in students of Faculty of Sports Sciences at Firat University were Joint (31.71%), Muscle (27.14%), Bone (26%), and Ligaments and Tendons (15.14%).

From the result we found that the most place of body that exposed to sports injuries are (Joint, Muscle, and Bone)

4. Results of the question four, which is:

“What are the common causes of sports injuries in students of Faculty of Sports Sciences at Firat University?” To answer this question, the researcher use (Frequency and percentage) in the data analysis and the results were as the table 8:

**Table 8.** Frequency and Percentage of the causes of sports injuries in students of Faculty of Sports Sciences at Firat University

<i>No.</i>	<i>Causes of injuries</i>	<i>Frequency</i>	<i>Percentage %</i>
1	bad warming up	161	14.98
2	Overload training	130	12.09
3	Violent and sudden movements	128	11.91
4	Unsuitable of ground for playing sports	101	9.40
5	Return to play sports before complete recovery	81	7.53
6	Not taking enough rest periods during the training program	47	4.37
7	Lack of attention to the rehabilitation after treatment of injury ends	47	4.37
8	non-performing regular medical examinations	42	3.91
9	Ignoring Individual differences between players	42	3.91
10	unfollowing the teacher/coach's instructions and directions	38	3.53
11	Overzealousness in training or competition	36	3.35
12	Lack of security and safety factors	32	2.98
13	unfollowing the Scientific foundations in training	32	2.98
14	Invalid equipment and tools to use	32	2.98
15	Participate in more than one sports activity	31	2.88
16	Lack of interest and following closely from the coach /teacher to the players	30	2.79
17	inappropriate sportswear	28	2.60
18	Not following a proper diet program	24	2.23
19	The low skill level	12	1.12
20	other	1	0.09
<b>Total</b>		<b>1075</b>	<b>%100</b>

It can be seen in the table 8, that the most common causes of sports injuries in students of Faculty of Sports Sciences at Firat University were, bad warming up (14.98%), overload training (10.09%), and violent and sudden movements (11.91%) and the less causes of sports injuries were, Other (0.09%), the low skill level (1.12%), not following a proper diet program (2.23%), and inappropriate sportswear (2.60%).

From the result we found that the most common causes of sports injuries are (bad warming up, overload training, and violent and sudden movements)

5. Results of the question five, which is:

“In which sport the possibility of sports injury is more in students of Faculty of Sports Sciences at Firat University?” to answer this question, the researcher use (Frequency and percentage) in the data analysis and the results were as the table 9:

**Table 9.** Frequency and percentage of sports injuries of each type of sports in students of Faculty of Sports Sciences at Firat University

<b>No.</b>	<b>Type of sports</b>	<b>Frequency</b>	<b>Percentage %</b>
<b>1</b>	Football	143	42.81
<b>2</b>	Track and Field	38	11.38
<b>3</b>	Volleyball	35	10.48
<b>4</b>	Basketball	27	8.08
<b>5</b>	Gymnastic	20	5.99
<b>6</b>	Boxing	15	4.49
<b>7</b>	Wrestling	14	4.19
<b>8</b>	Swimming	13	3.89
<b>9</b>	Handball	9	2.69
<b>10</b>	Table Tennis	9	2.69
<b>11</b>	Badminton	6	1.80
<b>12</b>	Tennis	5	1.50
<b>Total</b>		<b>334</b>	<b>%100</b>

It can be seen in the table 9, that the most sports exposed to sports injuries in students of Faculty of Sports Sciences at Firat University were Football (42.81%), Track

and Field (11.38%), and Volleyball (10.48%) and the less sports that exposed to sports injury were Tennis (1.50%), Badminton (1.80%), Table Tennis (2.69%).

From the result we found that the most sports that exposed to sports injuries are (Football, Track and Field, and Volleyball)

6. Results of the question six, which is:

“What is the number of repetitions of sports injuries in students of Faculty of Sports Sciences at Firat University?” To answer this question, the researcher use (Frequency and percentage) in the data analysis and the results were as the table 10:

**Table 10.** Frequency and Percentage of sports injuries in how many times the injuries repeated in students of Faculty of Sports Sciences at Firat University

<i>No.</i>	<i>repetitions</i>	<i>Frequency</i>	<i>Percentage %</i>
<i>1</i>	Frequent	109	43.25
<i>2</i>	One time	61	24.21
<i>3</i>	two times	54	21.43
<i>4</i>	Three times	28	11.11
<b><i>Total</i></b>		<b>252</b>	<b>%100</b>

It can be seen in the table 10, that the repetition of sports injuries in students of Faculty of Sports Sciences at Firat University were as the follow frequent (43.25%), one time (24.21%), two times (21.43%), three time (11.11%).

From the result we found that the repetition of sports injuries are as the follow (frequent, one time, two times, three time)

7. Results of the question seven, which is:

“how long the hospitalization period took in students of the Faculty of Sports Sciences at Firat University?” to answer this question, the researcher use (Frequency and percentage) in the data analysis and the results were as the table 11:

**Table 11.** Frequency and Percentage of recovery period in students of Faculty of Sports Sciences at Firat University

<i>No.</i>	<i>Recovery period</i>	<i>Frequency</i>	<i>Percentage %</i>
<i>1</i>	1 to 2 Weeks	91	36.11
<i>2</i>	3 to 4 Weeks	74	29.37
<i>3</i>	1 to 3 months	47	18.65
<i>4</i>	Over 3 months	40	15.87
<i>Total</i>		<b>252</b>	<b>%100</b>

It can be seen in the table 11, the period of the recovery to return to the normal state in students of Faculty of Sports Sciences at Firat University took about 1 to 2 Weeks (36.11%), 3 to 4 Weeks (29.37%), 1 to 3 months (18.65%), Over 3 months (15.87%).

From the result we found that the repetition of sports injuries are as the follow (frequent, 3 to 4 Weeks, 1 to 3 months, Over 3 months)

8. Results of the question eight, which is:

“Are there any differences in the common sports injuries in students of Faculty of Sports Sciences at Firat University according to the variable of the department?” to

answer this question, the researcher use (Chi-square) in the data analysis and the results were as the table 12:

**Table 12.** Chi-square, Frequency and Percentage for the common sports injuries in students according to the variable of the department (N=252)

No.	Sports injuries	Department								Chi	Sig.
		Physical				Coaching					
		yes		no		yes		no			
		Rep.	%	Rep.	%	Rep.	%	Rep.	%		
1	Rupture	11	<b>12.94</b>	74	87.06	48	<b>28.74</b>	119	71.26	7.84	<b>.005*</b>
2	Bruises	4	4.71	81	95.29	10	5.99	157	94.01	0.17	.674
3	Fracture	20	23.53	65	76.47	43	25.75	124	74.25	0.14	.700
4	Dislocations	17	20	68	80	37	22.16	130	77.84	0.15	.693
5	Sprain	45	52.94	40	47.06	98	58.68	69	41.32	0.75	.384
6	Cramp	28	32.94	57	67.06	48	28.74	119	71.26	0.47	.492
7	Wound	17	20	68	80	37	22.16	130	77.84	0.15	.693

It can be seen in the table 12, that there is a significant difference in students of Faculty of Sports Sciences at Firat University in the Rupture injury, according to the variable of the Department. where the coaching department was the highest (28.74%) and Physical Education department was the lowest (12.94%). which means that the rate of occur to the Rupture injury is highest in the coaching department comparing to the Physical Education department.

While there was no significant differences found in the other injuries in students of Faculty of Sports Sciences at Firat University according to the variable of department

9. Results of the question nine, which is:

“Are there any differences in the common sports injuries in students of Faculty of Sports Sciences at Firat University according to the variable of the study stage?”

To answer this question, the researcher use (Chi-square) in the data analysis and the results were as the table 13:

**Table 13.** Chi-square, Frequency and Percentage for the common sports injuries in students according to the variable of the study stage (N=252)

No.	Sports injuries	Study grade																Chi	Sig.
		1 <sup>st</sup> grade				2 <sup>nd</sup> grade				3 <sup>rd</sup> grade				4 <sup>th</sup> grade					
		yes		no		yes		no		yes		no		yes		no			
		Rep.	%	Rep.	%	Rep.	%	Rep.	%	Rep.	%	Rep.	%	Rep.	%	Rep.	%		
<b>1</b>	<b>Rupture</b>	10	37.04	17	62.96	4	17.39	19	82.61	15	17.05	73	82.95	30	26.32	84	73.68	5.78	.122
<b>2</b>	<b>Bruises</b>	2	7.41	25	92.59	2	8.70	21	92.59	6	6.82	82	93.18	4	3.51	110	96.49	1.78	.617
<b>3</b>	<b>Fracture</b>	3	11.11	24	88.89	8	34.78	15	65.22	21	23.86	67	76.14	31	27.19	83	72.81	4.30	.230
<b>4</b>	<b>Dislocations</b>	4	14.81	23	85.19	1	4.35	22	95.65	18	20.45	70	79.55	32	28.07	82	71.93	7.59	.055
<b>5</b>	<b>Sprain</b>	8	29.63	<b>19</b>	70.37	9	<b>39.13</b>	14	60.87	58	<b>65.91</b>	30	34.09	68	<b>59.65</b>	46	40.35	14.39	<b>.002*</b>
<b>6</b>	<b>Cramp</b>	9	33.33	18	66.67	7	30.43	16	69.57	31	35.23	57	64.77	29	25.44	85	74.56	2.41	.491
<b>7</b>	<b>Wound</b>	7	25.93	20	74.07	3	13.04	20	86.96	24	27.27	64	72.73	20	17.54	94	82.46	4.09	.251

It can be seen in the table 13, that there is a significant difference in students of Faculty of Sports Sciences at Firat University in the Sprain injury, according to the variable of the study stage. And for the benefit of the third class, where it was the highest (65.91%) and First class was the lowest (19%), which means that the rate of occur to the sprain injury is highest in the third class comparing to the other classes while there was no significant difference found in the other injuries in students of Faculty of Sports Sciences at Firat University according to the variable of study grade.

10. Results of the question ten, which is:

“Are there any differences in the common sports injuries in students of Faculty of Sports Sciences at Firat University according to the variable of the age?” To answer this question, the researcher use (Chi-square) in the data analysis and the results were as the table 14:

**Table 14.** Chi-square, Frequency and Percentage for the common sports injuries in students according to the variable of the age (N=252)

No.	Sports injuries	Age																Chi	Sig.
		< 20				21–25				26– 30				31 >					
		yes		no		yes		no		yes		no		yes		no			
		Rep.	%	Rep.	%	Rep.	%	Rep.	%	Rep.	%	Rep.	%	Rep.	%	Rep.	%		
1	Rupture	10	17.24	48	82.76	34	22.08	120	77.92	10	38.46	16	61.54	5	35.71	9	64.29	5.85	.119
2	Bruises	3	5.17	55	94.83	9	5.84	145	94.16	1	3.85	25	96.15	1	7.14	13	92.86	0.25	.968
3	Fracture	10	17.24	48	82.76	44	28.57	110	71.43	6	23.08	20	76.92	3	21.43	11	78.57	3.05	.383
4	Dislocations	8	13.79	50	86.21	39	25.32	115	74.68	6	23.08	20	76.92	1	7.14	13	92.86	5.13	.162
5	Sprain	32	55.17	26	44.83	92	59.74	62	40.26	13	50.00	13	50.00	6	42.86	8	57.14	2.20	.531
6	Cramp	18	<b>31.03</b>	40	68.97	48	<b>31.17</b>	106	68.83	2	<b>7.69</b>	24	92.31	7	<b>50.00</b>	7	50.00	8.99	<b>.029*</b>
7	Wound	13	22.41	45	77.59	39	25.32	115	74.68	1	3.85	25	96.15	2	14.29	12	85.71	6.51	.089

It can be seen in the table 14, that there is a significant difference in students of Faculty of Sports Sciences at Firat University in the Sprain injury, according to the variable of the age. And for the benefit of the age group (31>) which it was the highest (50%) and the age group (26-30) was the lowest (7.69%), which means that the rate of occur to the sprain injury is highest in the age group (31>) comparing to the other ages.

While there was no significant difference found in the other injuries in students of Faculty of Sports Sciences at Firat University according to the variable of age.

#### 11. Results of the question eleven, which is:

“Are there any differences in the common sports injuries in students of Faculty of Sports Sciences at Firat University according to the variable of the gender?” to answer this question, the researcher use (Chi-square) in the data analysis and the results were as the table 15:

**Table 15.** Chi-square, Frequency and Percentage for the common sports injuries in students of Faculty of Sports Sciences at Firat University according to the variable of the age (N= 252)

No.	Sports injuries	Gender								Chi	Sig.
		male				Female					
		yes		no		yes		no			
		Rep.	%	Rep.	%	Rep.	%	Rep.	%		
1	Rupture	51	<b>32.90</b>	104	67.10	8	<b>8.25</b>	89	91.75	20.22	<b>.000*</b>
2	Bruises	5	3.23	150	96.77	7	7.22	90	92.78	2.09	.147
3	Fracture	48	<b>30.97</b>	107	69.03	15	<b>15.46</b>	82	84.54	7.64	<b>.005*</b>
4	Dislocations	35	22.58	120	77.42	19	19.59	78	80.41	0.31	.573
5	Sprain	76	<b>49.03</b>	79	50.97	67	<b>69.07</b>	30	30.93	9.76	<b>.001*</b>
6	Cramp	47	30.32	29	69.68	76	29.90	176	70.10	0.01	.942
7	Wound	34	21.94	121	78.06	20	20.62	77	79.38	0.06	.804

It can be seen in the table 15, that there is a significant difference in students of Faculty of Sports Sciences at Firat University in the (Rupture, Fracture, and Sprain) injury, according to the variable of the gender. In the rupture injury, the male students were the highest (32.90%) and females were the lowest (8.25%). In the Fracture injury, the male students were the highest (30.97%) and the females were the lowest (15.46%). But in the Sprain injury, the female students were the highest (69.07%) and the males were the lowest (49.03%). which means that the rate of occur to the (rupture and fracture) are higher in male than the female students, and (sprain) is higher in female than the male students. While there was no significant difference found in the other injuries in students of Faculty of Sports Sciences at Firat University according to the variable of gender.

12. Results of the question twelve, which is:

“Are there any differences in the most body parts that exposed to sports injuries in students of Faculty of Sports Sciences at Firat University according to the variable of the department?” to answer this question, the researcher use (Chi-square) in the data analysis and the results were as the table 16:

**Table 16:** Chi-square, Frequency and Percentage for the most body parts that exposed to sports injuries in students according to the variable of the age (N= 252)

No.	Body parts	Department								Chi	Sig.
		Coaching				Physical					
		yes		no		yes		no			
		Rep.	%	Rep.	%	Rep.	%	Rep.	%		
1	Head and Face	28	16.77	139	83.23	8	9.41	77	90.59	2.48	.114
2	Neck	8	4.79	159	95.21	3	3.53	82	96.47	0.21	.643
3	Shoulder	20	<b>11.98</b>	147	88.02	2	<b>2.35</b>	83	97.65	6.54	<b>.010*</b>
4	Chest	3	1.80	164	98.20	1	1.18	84	98.82	0.13	.709
5	Back	12	7.19	155	92.81	7	8.24	78	91.76	0.08	.765
6	Humerus area	4	2.40	163	97.60	1	1.18	84	98.82	0.43	.511
7	Forearm	13	7.78	154	92.22	7	8.24	78	91.76	0.01	.900
8	Hand and Wrist	45	26.95	122	73.05	28	32.94	57	67.06	0.98	.321
9	Hip	6	3.59	161	96.41	4	4.71	81	95.29	0.18	.668
10	Thigh	10	5.99	157	94.01	2	2.35	83	97.65	1.64	.200
11	Knee	48	<b>28.74</b>	119	71.26	12	<b>14.12</b>	73	85.88	6.64	<b>.009*</b>
12	Leg	60	<b>35.93</b>	107	64.07	16	<b>18.82</b>	69	81.18	7.82	<b>.005*</b>
13	Ankle	80	<b>47.90</b>	87	52.10	24	<b>28.24</b>	61	71.76	8.99	<b>.002*</b>
14	Foot	47	28.14	120	71.86	20	23.53	65	76.47	0.61	.433

It can be seen in the table 16, that there is a significant difference in students of Faculty of Sports Sciences at Firat University in the (shoulder, knee, leg, and ankle) parts of the body, according to the variable of the department. The injuries of shoulder, in Coaching department was the highest (11.98%) and Physical Education department was

the lowest (2.35%). The injuries of knee, in Coaching department was the highest (28.74%) and Physical Education department was the lowest (14.12%). The injuries of leg, in Coaching department was the highest (35.93%) and Physical Education department was the lowest (18.82%). The injuries of ankle, in Coaching department was the highest (47.90%) and Physical Education department was the lowest (28.24%). which means that the rate of the most body parts that exposed to sports injuries were (shoulder, knee, leg, and ankle) in student of the Coaching department.

While there was no significant difference found in the other body part in students of Faculty of Sports Sciences at Firat University according to the variable of department.

13. Results of the question thirteen, which is:

“Are there any differences in the most body parts that exposed to sports injuries in students of Faculty of Sports Sciences at Firat University according to the variable of the study stage?” To answer this question, the researcher use (Chi-Squire) in the data analysis and the results were as the table 17:

**Table 17.** Chi-square, Frequency and Percentage for the most body parts that exposed to sports injuries in students according to the variable of the study grade (N= 252)

No.	Body parts	grade																Chi	Sig.
		1 <sup>st</sup> grade				2 <sup>nd</sup> grade				3 <sup>rd</sup> grade				4 <sup>th</sup> grade					
		yes		no		yes		no		yes		no		yes		no			
		Rep.	%	Rep.	%	Rep.	%	Rep.	%	Rep.	%	Rep.	%	Rep.	%	Rep.	%		
1	Head and Face	2	7.41	25	92.59	4	17.39	19	82.61	12	13.64	76	86.36	18	15.79	96	84.21	1.46	.690
2	Neck	1	3.70	26	96.30	1	4.35	22	95.65	4	4.55	84	95.45	5	4.39	109	95.61	0.03	.998
3	Shoulder	1	3.70	26	96.30	2	8.70	21	91.30	7	7.95	81	92.05	12	10.53	102	89.47	1.38	.709
4	Chest	1	3.70	26	96.30	1	4.35	22	95.65	1	1.14	87	98.86	1	0.88	113	99.12	2.37	.497
5	Back	2	7.41	25	92.59	1	4.35	22	95.65	5	5.68	83	94.32	11	9.65	103	90.35	1.50	.682
6	Humerus area	1	3.70	26	96.30	1	4.35	22	95.65	2	2.27	86	97.73	1	0.88	113	99.12	1.82	.609
7	Forearm	1	3.70	26	96.30	1	4.35	22	95.65	7	7.95	81	92.05	11	9.65	103	90.35	1.52	.676
8	Hand and Wrist	6	22.22	21	77.78	6	26.09	17	73.91	31	35.23	57	64.77	30	26.32	84	73.68	2.75	.431
9	Hip	1	3.70	26	96.30	1	4.35	22	95.65	1	1.14	87	98.86	7	6.14	107	93.86	3.27	.351
10	Thigh	4	<b>14.81</b>	23	85.19	1	<b>4.35</b>	22	95.65	1	<b>1.14</b>	87	98.86	6	<b>5.26</b>	108	94.74	8.63	<b>.034*</b>
11	Knee	10	37.04	17	62.96	6	26.09	17	73.91	13	14.77	75	85.23	31	27.19	83	72.81	7.35	0.061
12	Leg	10	<b>37.04</b>	17	62.96	5	<b>21.74</b>	18	78.26	35	<b>39.77</b>	53	60.23	26	<b>22.81</b>	88	77.19	8.16	<b>.042*</b>
13	Ankle	9	33.33	18	66.67	8	34.78	15	65.22	37	42.05	51	57.95	50	43.86	64	56.14	1.43	.696
14	Foot	6	22.22	21	77.78	6	26.09	17	73.91	19	21.59	69	78.41	36	31.58	78	68.42	2.84	.415

It can be seen in the table 17, that there is a significant difference in students of Faculty of Sports Sciences at Firat University in the (thigh, and leg) parts of the body, according to the variable of the study stage. The injuries of thigh, in first class was the highest (14.81%) and third class was the lowest (2.35%). The injuries of leg, in third class was the highest (39.77%) and second class was the lowest (21.74%). which means that the rate of the most body parts that exposed to sports injuries were (thigh) for the benefit of students of the first class, and the sports injuries of (leg) for the benefit of students of the third class.

While there was no significant difference found in the other body parts in students of Faculty of Sports Sciences at Firat University according to the variable of study grade.

14. Results of the question fourteen, which is:

“Are there any differences in the most body parts that exposed to sports injuries in students of Faculty of Sports Sciences at Firat University according to the variable of the age?” to answer this question, the researcher use (Chi-square) in the data analysis and the results were as the table 18:

**Table 18.** Chi-square, Frequency and Percentage for the most body parts that exposed to sports injuries in students according to the variable of the age (N= 252)

No.	Body parts	Age																Chi	Sig.
		< 20				21-25				26-30				31 >					
		yes		no		yes		no		yes		no		yes		no			
		Rep.	%	Rep.	%	Rep.	%	Rep.	%	Rep.	%	Rep.	%	Rep.	%	Rep.	%		
1	Head and Face	11	18.97	47	81.03	21	13.64	133	86.36	3	11.54	23	88.46	1	7.14	13	92.86	1.83	.607
2	Neck	2	3.45	56	96.55	7	4.55	147	95.45	1	3.85	25	96.15	1	7.14	13	92.86	0.40	.939
3	Shoulder	4	6.90	54	93.10	16	10.39	138	89.61	1	3.85	25	96.15	1	7.14	13	92.86	1.59	.659
4	Chest	1	1.72	57	98.28	1	0.65	153	99.35	1	3.85	25	96.15	1	7.14	13	92.86	4.48	.213
5	Back	4	6.90	54	93.10	12	7.79	142	92.21	2	7.69	24	92.31	1	7.14	13	92.86	0.05	.996
6	Humerus area	1	1.72	57	98.28	2	1.30	152	98.70	1	3.85	25	96.15	1	7.14	13	92.86	2.77	.428
7	Forearm	1	1.72	57	98.28	14	9.09	140	90.91	2	7.69	24	92.31	3	21.43	11	78.57	6.83	.077
8	Hand and Wrist	20	<b>34.48</b>	38	65.52	44	<b>28.57</b>	110	71.43	6	<b>23.08</b>	20	76.92	3	<b>21.43</b>	11	78.57	9.53	<b>.022*</b>
9	Hip	1	1.72	57	98.28	7	4.55	147	95.45	1	3.85	25	96.15	1	7.14	13	92.86	1.27	.735
10	Thigh	1	1.72	57	98.28	9	5.84	145	94.16	1	3.85	25	96.15	1	7.14	13	92.86	1.80	.614
11	Knee	14	24.14	44	75.86	42	27.27	112	72.73	3	11.54	23	88.46	1	7.14	13	92.86	5.32	.149
12	Leg	25	<b>43.10</b>	33	56.90	44	<b>28.57</b>	110	71.43	5	<b>19.23</b>	21	80.77	2	<b>14.29</b>	12	85.71	7.94	<b>.047*</b>
13	Ankle	24	41.38	34	58.62	68	44.16	86	55.84	8	30.77	18	69.23	4	28.57	10	71.43	2.64	.449
14	Foot	14	24.14	44	75.86	47	30.52	107	69.48	5	19.23	21	80.77	1	7.14	13	92.86	4.83	.184

It can be seen in the table 18, that there is a significant difference in students of Faculty of Sports Sciences at Firat University in the (Hand and Wrist, and leg) parts of the body, according to the variable of the age. The injuries of Hand and Wrist, in age group (<20) was the highest (34.48%) and age group (31>) was the lowest (21.43%). The injuries of leg, in age group (<20) was the highest (43.10%) and age group (31>) was the lowest (14.29%). which means that the rate of the most body parts that exposed to sports injuries were (thigh) for the benefit of students of the age group (<20), and the sports injuries of (leg) for the benefit of students of the age group (31>). While there was no significant difference found in the other body part in students of Faculty of Sports Sciences at Firat University according to the variable of age.

15. Results of the question fifteen, which is:

“Are there any differences in the most body parts that exposed to sports injuries in students of Faculty of Sports Sciences at Firat University according to the variable of the gender?” To answer this question, the researcher use (Chi-square) in the data analysis and the results were as the table 19:

**Table 19.** Chi-Squire, Frequency and Percentage for the most body parts that exposed to sports injuries in students according to the variable of the gender (N= 252)

No.	Body parts	gender								Chi	Sig.
		male				Female					
		yes		no		yes		no			
		Rep.	%	Rep.	%	Rep.	%	Rep.	%		
1	Head and Face	28	<b>18.06</b>	127	81.94	8	<b>8.25</b>	89	91.75	4.69	<b>.030*</b>
2	Neck	4	2.58	151	97.42	7	7.22	90	92.78	3.07	.079
3	Shoulder	15	9.68	140	90.32	7	7.22	90	92.78	0.45	.50
4	Chest	3	1.94	152	98.06	1	1.03	96	98.97	0.31	.576
5	Back	11	7.10	144	92.90	8	8.25	89	91.75	0.11	.736
6	Humerus area	3	1.94	152	98.06	2	2.06	95	97.94	0.00	.944
7	Forearm	12	7.74	143	92.26	8	8.25	89	91.75	0.02	.885
8	Hand and Wrist	41	26.45	114	73.55	32	32.99	65	67.01	1.23	.265
9	Hip	7	4.52	148	95.48	3	3.09	94	96.91	0.31	.573
10	Thigh	7	4.52	148	95.48	5	5.15	92	94.85	0.05	.816
11	Knee	42	27.10	113	72.90	18	18.56	79	81.44	2.39	.121
12	Leg	52	33.55	103	66.45	24	24.74	73	75.26	2.19	.138
13	Ankle	58	37.42	97	62.58	46	47.42	51	52.58	2.46	.116
14	Foot	42	27.10	113	72.90	25	25.77	72	74.23	0.05	.816

It can be seen in the table 19, that there is a significant difference in students of Faculty of Sports Sciences at Firat University in the (Head and Face) part of the body, according to the variable of the gender. The injuries of Head and Face, in male students

were the highest (18.06%) and female students were the lowest (8.25%). which means that the rate of the most body parts that exposed to sports injuries were only (Head and Face) in male students.

While there was no significant difference found in the other body part in students of Faculty of Sports Sciences at Firat University according to the variable of gender.

## 7. DISCUSSION

The results of the research showed that the most common sports injuries in students of Faculty of Sports Sciences at Firat University were Sprain (30.89%), Cramp (16.20%), Fracture (13.61%), and Rupture (12.74%) and the less sports injuries were Bruises (3.02%), Dislocations (11.66%), wound (11.88%).

The researcher believes, the cause that make the sprain become in the top of ranking among other injuries, especially in the ankle, is due of Having a standing movement and the fast transfer of the player from one place to another in most games, especially in group games such as (football, basketball, handball, etc.) where there is Constant pressure on the ankle joint, which may cause the injury, and among other causes is the player's lack of interest in warming up well and the occur of sudden movements, also one of the most important reasons is Unsuitable of ground to practice sports activity and inappropriate shoes.

As Sharet, indicated, it is a complete or partial tear of one or more ligaments of the joint as a result of a temporary displacement, and it is usually occurring the wrist and ankle joint. It is one of the most common injuries in sports stadiums and often occurs in team games or it can also occur in any other game. This type of injury occurs as a result of falling on one of the limbs or stumbling while walking or running, as the joint comes out of its natural place and then returns to its place at the same time (43). Among other causes is to return to exercise or participate in a sporting activity before complete recovery, which may increase pressure on the place of the injury, and therefore, the situation may get worst.

The results of the research showed that the most body parts that exposed to sports injury in students of Faculty of Sports Sciences at Firat University were Ankle (20.12%), Leg

(14.70%), and Hand and Wrist (14.12%) and the less body parts that exposed to sports injury were Neck (2.13%), Thigh (2.32%), Back (3.68%).

The researcher sees, the ankle joint was the most part exposed to injury among all other parts of the body in students of faculty of sports sciences at Firat University, because most of the study sample members are players in group games more than individual games. Among most of the team games at Firat University, the focus is on football, as it is the first popular game in Turkey, followed by basketball, volleyball, and others. As the movements of control, running with the ball, dribbling, and moving from a place to another are done through the foot that controls the movement of the ankle joint, and most of the attempts to cut the ball, prevent the shot, taking the ball, or catch up with the player in possession of the ball, the pressure is placed on the foot, ankle joint, and legs, which leads to repeated injury, as well as the player's Fulcrum in basketball and volleyball where he is on the instep. The bad warm-up, as well as the wrong performance (the wrong technique), may lead to a loss of balance, which makes the body's center of gravity unstable, which causes an increase in effort on the various parts of the body and thus exposure to injury. Ankle injuries are the most common among joint injuries, up to 85% due to the fact that the ankle is one of the most complex joints in the body, and the injury is often a tear or stretching of the ligaments that connect the ankle bones, the injury occurs as a result of various lower body movements that are not commensurate with the amount of pressure exerted on this area and the size of the ankle (2).

These results are in agreement with the study of Muhammad, regarding an increase in the incidence of injury to the lower limbs, especially the knee and ankle joints (12). Also the study of Andrew, showed that the most common diagnosis was bruising and sprained ankle, which accounted for an average of 78% of injuries caused by contact with another player (62). And the study of Majali and Al-Saleh showed that the ankle was the most vulnerable area, at a rate of 10.60% (63).

The results of the research showed that the most place of the body that exposed to sports injury in students of Faculty of Sports Sciences at Firat University were Joint (31.71%), Muscle (27.14%), Bone (26%), and Ligaments and Tendons (15.14%).

The researcher sees, that joint injuries are the most common in students of the Faculty of Sports Sciences at Firat University, the injuries to the joint include dislocations, sprains, joint bruises, and even joint ruptures, as they are among the common injuries that occur in athletes and in can be found in all sports. The athlete may be injured in the joint for many causes, including weakness of the muscles and ligaments surrounding the joint, or as a result of external stress on the joint area, which leads to the occurrence of injury in the joint, such as dislocation, sprain, or tearing of the ligaments surrounding the joint and other injuries. Joint injuries are the most common in the sports field, due to the movement that the athlete performs. Articular injuries are common in team games such as (football, basketball, Volleyball, Handball) as well as in individual games such as (Fencing, Boxing, Wrestling, Gymnastics, Tennis) and in recreational sports such as (jogging and walking) (2). It is a common injury in the field of sports and in all types of practice for various games, especially in competitive sports. The direct hit to the joint leads to an internal or per articular bruise or rupture of ligaments and soft tissues is a common injury in the joints, and the fibers of the joint capsule may all tear. Or the ligaments related to it. The bones meet with each other through the joints that allow movement between them and help to stabilize these two bones. The synovial membrane and the surrounding ligaments and muscles, which differ according to their function (27).

The results of the research showed that the most common causes of sports injuries in students of Faculty of Sports Sciences at Firat University were bad warming up (14.98%), overload training (10.09%), and violent and sudden movements (11.91%) and the less causes

of sports injuries were Other (0.09%), the low skill level (1.12%), not following a proper diet program (2.23%), and inappropriate sportswear (2.60%).

And here the researcher believes, that a warm-up is from the basic requirements in all sports training and competitions, and in view of this, it is seen by some physiologists of sports training such as Bruce, Fox and Bowers, Fischer and Peterson, as a principle of sports training principles such as well-known principles The other in sports training, such as: individual differences, privacy in training, and Progressive training... etc. And since the warm-up aims to prepare the internal organs and skeletal muscles to work efficiently, this protects them from injury and performs their functions to the fullest. The researcher believes that students of the Faculty of Sports Sciences at Firat University, in general, go to practical lectures without doing the warm-up process properly and for sufficient time, and because of that the body's muscles are not properly prepared to carry out the required sporting activity, which causes them injury (64).

Fox and Bowers, indicate that athletes must warm-up before athletic training and athletic competitions for the following reasons: Increase the cardiac output, thus increasing the blood paid to the working muscles to provide them with oxygen and food. Raising the body temperature in general, and the muscles in particular, which facilitates the work of enzymes and increases the effectiveness of metabolism in the skeletal muscles by providing oxygen and nutrients needed for the work of the muscles. Prevention of sports injuries, especially in high-intensity activities that are performed once, such as: throwing activities, jumping, short-distance running, anaerobic activities (64). These results are in agreement with the study of Al-Qaddumi, that the best method of warm-up was (10 minutes' jog + 5 minutes stretching) and that the use of any method of warm-up positively affects the increase in the vertical jump distance of volleyball players compared to not doing the warm-up (65). Also, the study of Muhammad, that insufficient warm-up of both types and the special vocabulary of each game

in terms of tactics and skill were among the most prominent causes of injuries, as well as the study of Majali (2007) that one of the most common causes of injuries was lack of warm-up at the frequency (166) and by (29.85%) (12).

As for the overload training, the researcher believes that training is excessively in all sports and games, whether it is a team or individual games, it negatively affects the level of the athlete in general and the student in particular, because the student of Faculty of Sports Sciences, in general, has a specific endurance, so if the training passes the ability of the student, this may cause to injury. Because over-training may lead to extreme fatigue and a decrease in the level of oxygen in the blood, causing injury if he continues to engage in the sports activity. Violent movements are also one of the most common causes of sports injuries in all sports activities, especially in direct contact games with opponents in group games such as (football, handball, etc.) and individual games such as (boxing, wrestling, etc.). which may be the main reason for the player's exclusion from practicing sports activity in general and the student in particular.

The results of the research showed that the most sports exposed to sports injuries in students of Faculty of Sports Sciences at Firat University were (Football by 42.81%, Track and Field by 11.38%, and Volleyball by 10.48%) and the less sports that exposed to sports injury were (Tennis by 1.50%, Badminton by 1.80%, Table Tennis by 2.69%).

The researcher believes that it was not surprise that football is the most sport that sports injuries occur in of all kinds, it is the number one sport in the world and is also the most popular sport in Turkey. And the reason of the occurrence to injuries in a large number in this sport is due to the presence of direct friction between the players, the coarseness of the competition, as well as the great effort that the player makes during the competition in order to reach the opponent's goal, score the goal and win matches.

As mentioned by Jabali, the football player is exposed to various injuries, ranging in severity from the simple one that does not cause serious damage, does not require effort or a long time to treat, and the very serious injuries that lead to severe damage that may cost the player's life. The most common injuries among Football players are lower extremity injuries, where it is estimated at 85% of injuries, as the knee joint is exposed to 33% of injuries, then muscle spasms by 18%, then fractures by (18%). then ankle joint injuries (9.5%), muscle laceration (6%), then spinal injuries (5.5%), and other joints are exposed to injury (3%) (66).

As for Track and field sports, it came second in terms of the high incidence of sports injuries in it, and the researcher believes that the causes behind this may be the inadequacy of the field for practicing sports, or the bad warm-up and also the causes could be the student's inexperience in choosing the appropriate shoes for the exercises. as well as including many activities in the track and field, which cause various injuries. Al-Zayat, also indicates the diversity of sports injuries among athletes, as they can occur in different places of the body and with different strengths according to the type of activity and other influences (67). Where he indicates that injuries in athletics can occur in muscles and tendons or in joints and ligaments or in soft tissues and in bones, also Thomson, mentioned that the different and varied causes of injuries in athletics can result from trauma or overload in training or it may be due to internal or external factors (68).

The results of the research showed that the repetition of sports injuries in students of Faculty of Sports Sciences at Firat University were as the follow frequent (43.25%), one time (24.21%), two times (21.43%), three time (11.11%). The researcher believes that injuries were occurring frequently in students, and this may be due to many causes, the most important causes are (bad warm-up, overload training, excessive enthusiasm for training and competition, violent and sudden movements, and other reasons) all of which are a cause of frequent injuries, especially if the student was not at the required level.

The results showed in the table 11, which Related to the question seven “how long the hospitalization period took in students of the Faculty of Sports Sciences at Firat University?” the period of the recovery to return to the normal state in students of Faculty of Sports Sciences at Firat University took about 1 to 2 weeks (36.11%), 3 to 4 weeks (29.37%), 1 to 3 months (18.65%), Over 3 months (15.87%).

According to the researcher, the recovery period from most of the injuries took from one to two weeks, which means that most of the injuries suffered by students in the Faculty of Sports Sciences were from the first and second degree, while each injury has its different degrees according to the severity of the injury that occurs to the player in general and the student in particular while practicing sports activities.

According to Reza, there are three degrees of injury: the first-degree injury, points to minor injuries in terms of severity that block the player or prevent him from completing the match, and it includes about 80 - 90% of injuries such as abrasions, bruises, and muscle cramps. second-degree injury, points to Moderate injuries in terms of severity Which prevents the athlete from exercising for a period of one to two weeks and often represents about 8% such as muscle rupture and ripped ligaments in the joints. third-degree injury, it points to severe injuries, which completely prevent the player from continuing in the practice of the athlete for a period not less than a month, and rated one of the few injuries that occur about 1 - 2%, but they are dangerous, such as fractures of all kinds (27).

The results of the research showed there was a significant difference in students of Faculty of Sports Sciences at Firat University in the Rupture injury, according to the variable of the Department. where the coaching department was the highest (28.74%) and Physical Education department was the lowest (12.94%). which means that the rate of occur to the

Rupture injury is highest in the coaching department comparing to the Physical Education department.

The researcher believes that the increased in the rate of rupture in students of the Coaching department compared with the physical education department may be the causes for the difference in the curricula between the two departments and the method of their application. As it is known, rupture is one of the most common injuries that an athlete is exposed to during a sporting activity.

The results of the research showed there was a significant difference in students of Faculty of Sports Sciences at Firat University in the Sprain injury, according to the variable of the study grade. And for the benefit of the third class, where it was the highest (65.91%) and First class was the lowest (19%), which means that the rate of occur to the sprain injury is highest in the third class comparing to the other classes.

The researcher believes that the high dislocation injuries of third class students are because these students have reached a good level of skill mastery and a good level of physical fitness, so it is possible for them to participate in high-level competitions that require high physical fitness and excellent skills, such as competitions with other universities, As a result of the player's participation in these competitions and progress in the level of practical lectures, the player may be exposed to such an injury, because the dislocation occurs as a result of a strong blow to one or both of the two bones forming the joint, which causes this injury, such as falling on the ground from a high altitude or when one of the player limb crashes with ground.

The results of the research showed there was a significant difference in students of Faculty of Sports Sciences at Firat University in the Sprain injury, according to the variable of the age. And for the benefit of the age group (31>) which it was the highest (50%) and the age

(26-30) was the lowest (7.69%), which means that the rate of occur to the sprain injury is highest in the age group (31>) comparing to the other ages.

The researcher believes that the high incidence of muscle cramp injuries in students who past age 31 years of age, is because that the person shows signs of progressing gradually, including loss of physical fitness and the loss of muscle ability little by little is what increases the possibility of exposure to injury, as it is known at the age after (31years) that a person appears a bit signs of aging, including (an increase in body fat percentage, a change in the shape of the body, loss of muscle size and capacity, loss of flexibility, loss of stamina, fatigue quickly when practicing activities, etc.) among the many causes that make the body more expose to injury.

And muscle cramp is defined as a sudden cramps and muscle painful and make it difficult for the muscles to perform. Muscle cramps are injuries that most people experience at sometimes in their life. Athletes can occur to muscle cramp during or after finishing of exercises or competition, such as a football with extra time, or a long-distance run, athletes may get cramp in a muscle (35). also it can be defined, it is a localized increase in the incoming nerve signals for the muscle or Infected muscles, which causes a physiological change in ions and Shipments outside the walls of muscle cells and leads to a sudden and painful contraction of those muscles (28).

The results of the research showed there was a significant difference in students of Faculty of Sports Sciences at Firat University in the (Rupture, Fracture, and Sprain) injury, according to the variable of the gender. In the rupture injury, the male students were the highest (32.90%) and females were the lowest (8.25%). In the Fracture injury, the make students were the highest (30.97%) and the females were the lowest (15.46%). But in the Sprain injury, the female students were the highest (69.07%) and the makes were the lowest (49.03%). which

means that the rate of occur to the (rupture and fracture) are higher in male than the female students, and (sprain) is higher in female than the male students.

The researcher believes that the higher rate of sports injuries in male students more than female students, especially muscle rupture and fracture, is due to the fact that male students are more motivated and active to exercise, and the endurance capacity of male students are greater compared to female students, and sometimes there is friction or roughness in playing such as (football, handball ... etc) which Increases the Possibility of injury in male more than female students. As the rupture defined, it is the tension or tear of the muscle fibers, tendons, or bag envelope around muscle as a result of intense, violent, and sudden muscle effort, to a greater degree than the muscle's ability to withstand this effort (36). Also the fracture is a separation of the bones from each other into one or more parts it might be a complete or incomplete break in a bone as a result of exposure to strong external forces (external violence) or collision with a hard object (6, 40). As for the high rate of sprain in female students, it might be because their muscles weakness due to lack of continuous exercise, which leads to injury when any sudden movement or wrong performance in technique occurs.

The results of the research showed there was a significant difference in students of Faculty of Sports Sciences at Firat University in the (shoulder, knee, leg, and ankle) parts of the body, according to the variable of the department. The injuries of shoulder, in Coaching department was the highest (11.98%) and Physical Education department was the lowest (2.35%). The injuries of knee, in Coaching department was the highest (28.74%) and Physical Education department was the lowest (14.12%). The injuries of leg, in Coaching department was the highest (35.93%) and Physical Education department was the lowest (18.82%). The injuries of ankle, in Coaching department was the highest (47.90%) and Physical Education department was the lowest (28.24%). which means that the rate of the most body parts that

exposed to sports injuries were (shoulder, knee, leg, and ankle) in student of the Coaching department.

The researcher believes that the reason of the differences in the body parts that exposed to sports injuries in the Coaching department compared with the physical education department was because of the difference in the curricula between the two departments and the method of their application. The causes could be the differences between the students in both departments as well.

The results of the research showed there was a significant difference in students of Faculty of Sports Sciences at Firat University in the (thigh, and leg) parts of the body, according to the variable of the study stage. The injuries of thigh, in first class was the highest (14.81%) and third class was the lowest (2.35%). The injuries of leg, in third class was the highest (39.77%) and second class was the lowest (21.74%). which means that the rate of the most body parts that exposed to sports injuries were (thigh) for the benefit of students of the first class, and the sports injuries of (leg) for the benefit of students of the third class.

The researcher believes that the reason for the increase in the rate of injuries in the different parts of the body in first grade students is because they are new and also because of the lack of physical fitness, and also because of lack of experience about the different sports activities from the scientific and field terms. As for the third grade students, and the exposure of different body parts to injury, is because these students have reached a good level of skill mastery and a good level of physical fitness, so it is possible for them to participate in high-level competitions that require high physical fitness and excellent skills, such as competitions with other universities, As a result of the player's participation in these competitions and progress in the level of practical lectures, the different player body parts may expose to injury.

. It can be seen, that thigh and leg injuries shows that the majority of students are players of team games, such as football, as most of their injuries are in the lower limb of the body.

The results of the research showed that there was a significant difference in students of Faculty of Sports Sciences at Firat University in the (Hand and Wrist, and leg) parts of the body, according to the variable of the age. The injuries of Hand and Wrist, in age group (<20) was the highest (34.48%) and age group (31>) was the lowest (21.43%). The injuries of leg, in age group (<20) was the highest (43.10%) and age group (31>) was the lowest (14.29%). which means that the rate of the most body parts that exposed to sports injuries were (thigh) for the benefit of students of the age group (<20), and the sports injuries of (leg) for the benefit of students of the age group (31>).

The researcher believes, that the reason of exposed to the sports injury in the different parts of the body in students of the age group (<20) is the lack of physical fitness in the students and the little experience in various activities. As can be indicates that most students of this age group are students of the first and second grade. most of the them doesn't have sufficient experience and good fitness that may expose him to injury, also the student's enthusiasm to practice sports activities, and usually the new student is very excited and motivated to do new things, loves to challenge and new adventure, especially in the field of sports which is full of challenges and adventures, and these are some of the causes that lead to various injuries in the body.

The results of the research showed there was a significant difference in students of Faculty of Sports Sciences at Firat University in the (Head and Face) part of the body, according to the variable of the gender. The injuries of Head and Face, in male students were the highest (18.06%) and female students were the lowest (8.25%). Which means that the rate

of the most body parts that exposed to sports injuries were only (Head and Face) in male students.

The researcher believes, the causes that the head of the face expose to injury, whether in male students or female students, that it is like any other part of the body exposed to injury and for any causes, and the head or face may be exposed to various injuries, such as (fracture, bruising, wounds of all types, etc.) and the sports field with all types of activities, is not empty of injuries and there is always someone at expose to injury, whether it is an individual game or team game, because injury is part of the big world of sports.

## **8. CONCLUSIONS AND RECOMMENDATIONS**

### **8.1. Conclusion**

From the results of the study and its discussion, the researcher concludes: The most sport that occurred to sports injuries was football, followed by Track and field, while the least sport in which injuries occurred was tennis, followed by badminton. The most common sports injuries were sprains, followed by Cramps, and the least sports injuries were bruises, followed by dislocations. The most parts of the body exposed to sports injuries were the ankle, followed by the leg, while the least parts of the body exposed to sports injuries were the chest, followed by the humerus area. Bad warming up with its all requirements, and overload training was a major causes of sports injuries. The most sports injuries were happening in the students, most of the injuries that occurred to students took (1-2 weeks) to recover completely, which means that the most injuries were not from a dangerous degree. Sports injuries occur frequently to the different parts of the body and to both gender as long as there is exercises. Sports injuries occur at all grades as long as there are requirements for basic skill in different games. There are many causes that lead to sports injuries, but the most common causes generally in all sports activity are: bad warming up that occurs in students of faculty of sports sciences.

It was also shown, that there was significant difference in the most common sports injuries in students of faculty of sports sciences at Firat University according to the variable of the department, study grade, gender, and age. And there were significant differences in the most parts of the body that exposed to sports injuries in students of faculty of sports sciences at Firat university according to the variable of the department, study grade, gender, and age.

## **8.2. Recommendations**

In terms of the aims and results of the study, the researcher recommended the following recommendations:

1. Paying attention to warming up well for all parts of the body, also pay attention to the individual differences between students and not giving exercises that are higher than students' ability.
2. Trying to provide safety and security factors such as the necessary devices and tools while performing difficult and violent movements to avoid injury.
3. Paying attention to rehabilitating players after injury before returning to exercises to avoid complications.
4. Not allow the student to participate in more than one activity if he is not ready for it.
5. Taking care of the closed halls and sports field for lessons and re-maintaining them if needed.
6. Follow-up students during practical lessons by the teacher and direct them in order to avoid the occurrence of injury.
7. Paying attention to conduct more studies on individual and team games to know the common injuries in each game and work to reduce these injuries as much as possible.
8. do a practical test at the beginning of each year to find out the level of students' physical fitness, and make the results of the test as a part of the evaluation process for the student during the academic year.
9. The necessity of having the first aid materials in the practical lectures.

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## 10. APPENDICES

### Appendix 1: The names of arbitrators / expert, their specialist and scientific titles

No.	Arbitrators / Expert name	scientific title	Specialization	Workplace
1	Dr. Ali Hussein Youssef	Lecturer	Sports therapy	Salahaddin University
2	Muhammad Mohi Hussein	Lecturer	Sports medicine and sports injury rehabilitation	University of Duhok
3	Abdulrahman Nouredin Subhi	professor	Physiotherapy specialist	Riffa sports club
4	Dr. Yüksel SAVUCU	professor	Sports sciences	Firat university
5	Dr. Azad Ahmed Khaled	Assistant Prof.	The science of sports training	University of Duhok
6	Munib Abdullah Fathe	Assistant Prof.	Physical Education and Sport Sciences	University of Mosul
7	Dr. Ziad Mahfouz Abdel Qader	Assistant Prof.	The science of sports training	University of Duhok
8	Dr. Safaa Al-Din Taha Al-Hajjar	professor	The science of sports training	Salahaddin University
9	Mahmoud Shukr Saleh	professor	Measurement and evaluation	University of Mosul
10	Rabie Khalaf Jameel	Lecturer	Measurement and evaluation	University of Mosul

## Appendix 2. Appendix Of Prepared Questionnaire For The Study

### PERSONAL INFORMATION AND QUESTIONNAIRE FORM

Dear student,

This questionnaire has been prepared to define “**Investigation of Sports Injuries and Their Causes in Students of Faculty of Sports Sciences at Firat University**” In order to complement the requirements for obtaining a master’s degree in sports science, the information that you will provide will be used only for the purposes of scientific research.

**Please, read carefully to be accurate and honest when answering questions.**

**Please give accurate answers to all the questions in the form correctly and sincerely.**

**Dear students, you can give a multiple answer to each question.**

**Dear student, this is a scientific study. Please read the options. Thanks in advance for your help.**

#### Section One: Personal Information Form

please enter your personal information

**Gender:** Male( ) Female( )

**Age :**

**Height:**

**Weight:**

**Department:** Physical Education ( ) Coaching Education ( )

**Study grade:** First ( ) Second ( ) Third ( ) Fourth ( )

**In which section is the specialized game that you play?**

**Team games ( ) Individual games ( )**

**Section two: questions related to sports injuries**

**Question one:** in which of the following sports, have you been injured more?

<b>No.</b>	<b>Sport type</b>	<b>Yes</b>	<b>No</b>
<b>1</b>	Football		
<b>2</b>	Basketball		
<b>3</b>	Volleyball		
<b>4</b>	Handball		
<b>5</b>	Tennis		
<b>6</b>	Table Tennis		
<b>7</b>	Wrestling		
<b>8</b>	Boxing		
<b>9</b>	Gymnastic		
<b>10</b>	Track and Field		
<b>11</b>	Swimming		
<b>12</b>	Badminton		

**Question two:** which part of your body exposed to sports injured?

No.	The affected body part	Yes	No	Notes
1	Head and Face			
2	Neck			
3	Shoulder			
4	Chest			
5	Back			
6	Humerus area			
7	Forearm			
8	Hand and Wrist			
9	Hip			
10	Thigh			
11	Knee			
12	Leg			
13	Ankle			
14	Foot			
15	Other part			

**Question three:** According to what you selected in (Question two) where did the injury happen to you?

No.	Injury area	Yes	No
1	In Muscle		
2	In Bone		
3	In Joint		
4	In Ligaments and Tendons		

**Question four:** Which of the following types of injury happen to you?

No.	Type of injuries	Yes	No
1	Rupture		
2	Bruises		
3	Fracture		
4	Dislocations		
5	Sprain		
6	Cramp		
7	Wound		

**Question five:** In your opinion, what are the most common causes of sports injuries?

<b>No.</b>	<b>Causes of injuries</b>	<b>agree</b>	<b>disagree</b>
<b>1</b>	bad warming up		
<b>2</b>	Overload training		
<b>3</b>	Participate in more than one sports activity		
<b>4</b>	Unsuitable of ground for playing sports		
<b>5</b>	The low skill level		
<b>6</b>	Return to play sports before complete recovery		
<b>7</b>	inappropriate sportswear		
<b>8</b>	Lack of security and safety factors		
<b>9</b>	unfollowing the Scientific foundations in training		
<b>10</b>	Lack of interest and following closely from the coach /teacher to the players		
<b>11</b>	Not taking enough rest periods during the training program		
<b>12</b>	non-performing regular medical examinations		
<b>13</b>	Not following a proper diet program		
<b>14</b>	Overzealousness in training or competition		

<b>15</b>	unfollowing the teacher/coach's instructions and directions		
<b>16</b>	Ignoring Individual differences between players		
<b>17</b>	Lack of attention to the rehabilitation after treatment of injury ends		
<b>18</b>	Violent and sudden movements		
<b>19</b>	Invalid equipment and tools to use		

**Question six:** How many times have you been injured?

<b>One time</b>	<b>Two times</b>	<b>Three times</b>	<b>Frequent</b>

**Question seven:** How long the recovery period took?

<b>1 to 2 Weeks</b>	<b>3 to 4 Weeks</b>	<b>1 to 3 months</b>	<b>Over 3 months</b>

**Appendix 3. Request for Arbitrators / Expert opinions on the questionnaire**

**FIRAT UNIVERSITY**

**INSTITUTE OF HEALTH SCIENCES**

**DEPARTMENT OF PHYSICAL EDUCATION AND SPORTS SCIENCES**

To / **expert professor** ..... **Respected**

Researcher (**Rizgar Ramadhan Darweesh**) a master student In Faculty of Sports Sciences at Firat University, Turkey. And his student number (**182301116**) is preparing a master's thesis in Sports Sciences entitled:

**"Investigation of sports injuries and their causes in students of Faculty of Sport Sciences at the Firat University"**

For the purpose of achieving the aims of the research, The researcher modified the scale (Nada, 2014) where the original scale included three part (the affected body parts, types of sports injuries, the causes of injury ). To be more suitable for research requirements, the researcher developed it into four part which is following down in the questionnaire

In view of your experience and scientific knowledge, please kindly provide your opinions and comments as follows:

- Validity or invalidity of the scale.
- Add or remove any paragraph that you see it's necessary to change.

**Name:**

**Scientific specialization:**

**Scientific title:**

**Workplace:**

**Date:**

